PULP & PAPER

Discussions Wax Hot in Both North and South America

...at Buenos Aires see page 52
...at Philadelphia see page 60
...at Asheville see page 90

Pulp Producers See No Clouds in Look at Future see page 70

BUCKEYE—A MILL BUILT ON NEW PRINCIPLES . . . for PULP & PAPER's own pictures—first to be published . . . see page 72

DECEMBER 1954

WHAT'S THE BIG IDEA

Like any other supplier, we are naturally anxious to help you make better paper. But two years ago, we got a big new idea—to take extra steps to help you *sell* more paper. You know these extra steps as the MELOSTRENGTH Promotion Program.

By mail, advertising, publicity, radio, TV, and through personal calls by our field men on your customers, we have been telling the story of MELOSTRENGTH* Paper and the MELOSTRENGTH promotion to converters, jobbers and consumers. How's it going over? The idea has caught their imagination—the imagination that builds sales!

Here's what MELOSTRENGTH means to your customers—converters, merchants, distributors.

MELOSTRENGTH means better paper!

1. MELOSTRENGTH means higher strength both wet and dry—measured by tensile, burst or fold . . . greatly increases durability, inhibits linting, reduces color bleeding, and improves wet-rub resistance.
2. MELOSTRENGTH means softer, more absorbent fibers for napkins, facial tissues, towels, tablecloths, etc. . . . virtually eliminates fuzz.
3. MELOSTRENGTH means greater smoothness, improved fiber bonding, and better wax pick.
4. MELOSTRENGTH means better printability because of improved surface characteristics and because it provides increased dimensional stability, and less curl.

MELOSTRENGTH means easier selling!

1. MELOSTRENGTH gives your customers' salesmen an extra talking point. It has become a recognized symbol of quality in paper products—quality that gives the little extra nudge of confidence that helps put over more sales!
2. MELOSTRENGTH pre-sells all along the sales pipeline. Cyanamid's Promotion Program is building wide consumer acceptance through radio, TV, magazine and newspaper publicity and advertising.

This promotional selling is a valuable added ingredient, an extra quality that is helping many papermakers expand their markets. For a current report on the progress of the MELOSTRENGTH program, and how you and your customers stand to benefit by participating today, drop us a line.

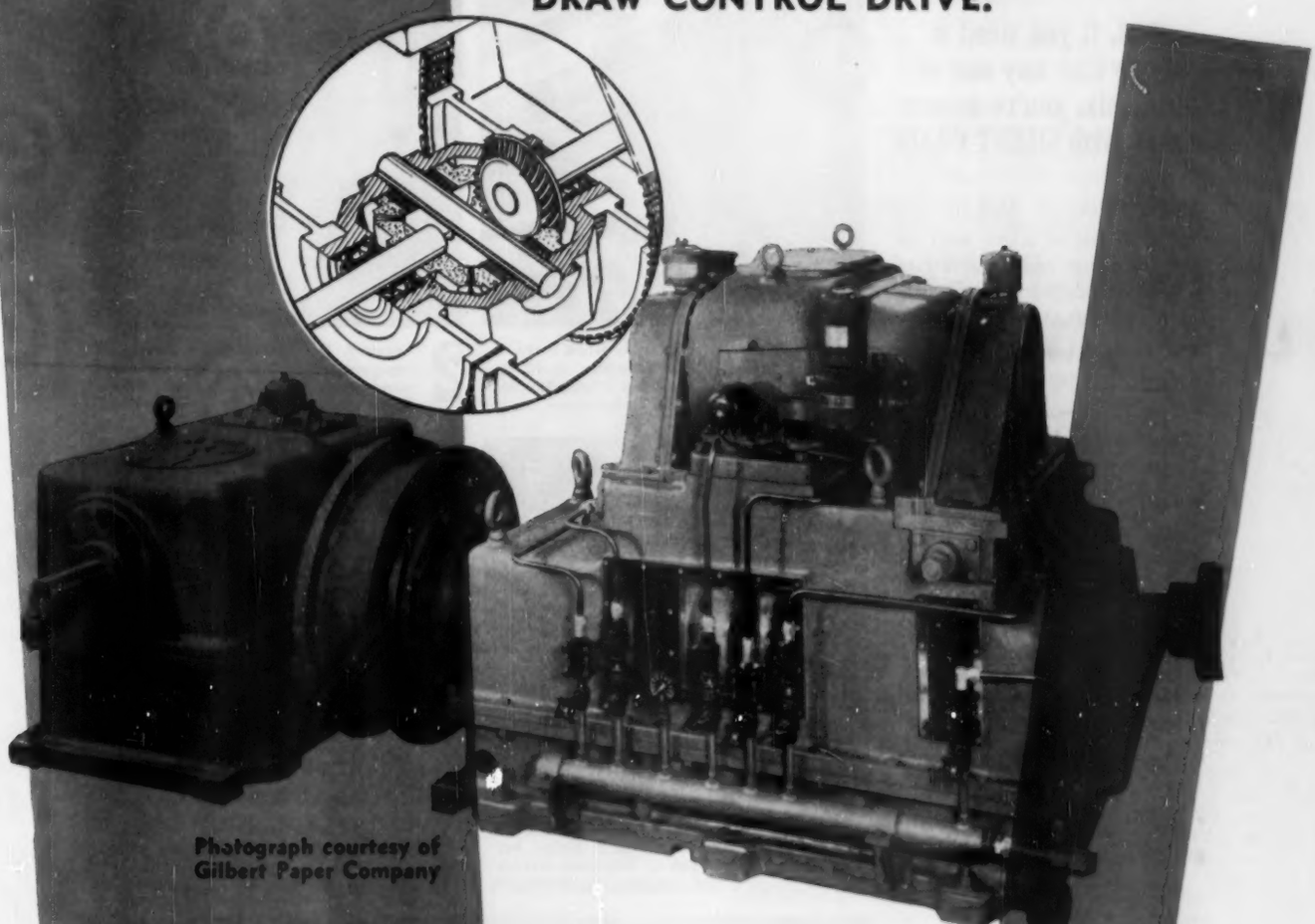
*Trade-mark

AMERICAN *Cyanamid* COMPANY
PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited, Toronto and Montreal

Experience

DICTATED THE SPECIFICATIONS FOR THE RICE BARTON DIFFERENTIAL DRAW CONTROL DRIVE.



Photograph courtesy of Gilbert Paper Company

- A simple self-contained differential drive unit that consistently maintains precise draw control.
- A unit separate from the line shaft, with its clutch on the high-speed intake shaft, so that unit is completely at rest when its section is shut down.
- A unit with designed accessibility for easy maintenance.

RICE BARTON

RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: Ray Smythe · · 501 Park Building · Portland, Oregon

RB12-54

No other drive does all these jobs like

Link-Belt SILENT CHAIN

YES, if you need a drive like any one of these six, you're money ahead with SILENT CHAIN

COMBINING the flexibility and quietness of a belt with the positive action and durability of a gear — Link-Belt Silent Chain offers unmatched advantages for a wide range of drives. Check these reasons why:

- Lower cost—often lower in first cost, always lower in ultimate cost.
- Longer life — trouble-free performance for 25 or 30 years is common.
- No dismantling machine or removing sheaves for repairs.
- Better than 98% efficiency.
- Maintained ratio assures full productive capacity.
- Slipless action assures a better product.
- Easy to install.
- Safe to employees — operates in oil-retaining casing.

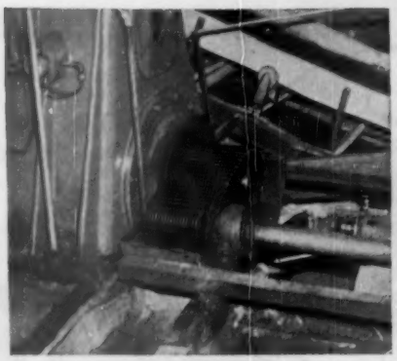
New 88-page Book 2425 gives complete data on silent chain. Ask a Link-Belt engineer or distributor for your copy today.

LINK-BELT

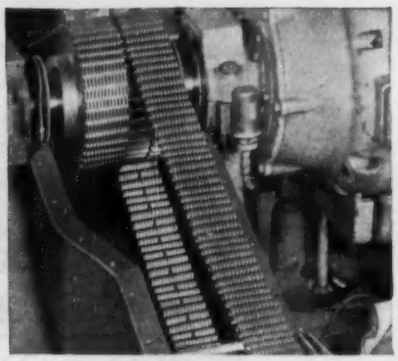
13,000

SILVERSTREAK
SILENT CHAIN DRIVES

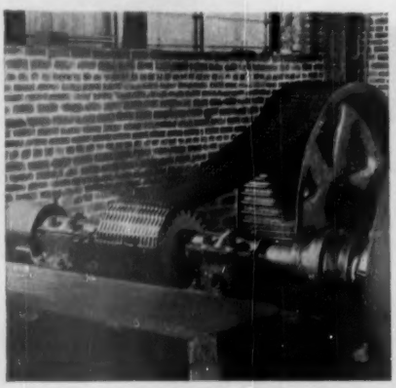
LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.



1 **Production increased 33%** when speed of this peeler lathe was stepped up by installing two silent chain drives. Neither engine nor lathe had to be moved.

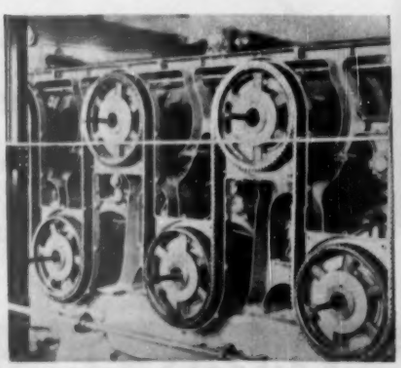


2 **Constant, high speeds** were assured by equipping each of 48 automotive test stands with two Link-Belt Silverstreak Silent Chain Drives.

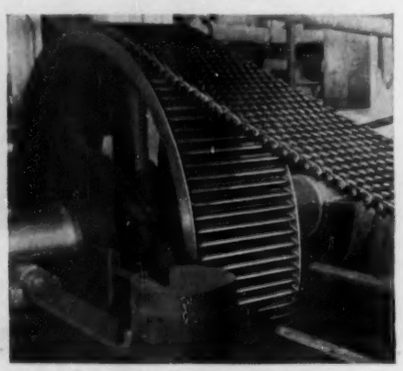


3 **Long life under severe service**—This 250-hp Link-Belt Silent Chain Drive has operated line shaft in cold draw section of seamless tube company since 1916.

4 **Fractional hp drives** are positive and dependable with Link-Belt Silent Chain. Above, two 3/16" pitch chains drive machine fabricating refrigerator parts.



5 **Accurate timing** is guaranteed for this dryer by Link-Belt Duplex Silent Chain. All shafts travel at uniform angular velocity, permitting precise coordination of process.



6 **Minimum maintenance**—This is one of 24 Link-Belt Silent Chain beater drives in a pulp mill. All have operated for many years with little attention.

PULP & PAPER

Production and Management Magazine of the Industry

December, 1954
Vol. 28—No. 13

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Publication Office
Emmett Street, Bristol, Connecticut
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1791 Howard St., Chicago 26, Ill. ..... ROgers Park 4-3420

Advertising and Production Office
370 Lexington Ave., New York 17, N.Y. ..... MUrray Hill 3-9294
71 Columbia St., Seattle 4, Wash. (MA 1626); 402 Pender St. West, Vancouver 3, B.C. (MA 7287); 3518 Dante St., New Orleans 18, La. (AM 2762); 534 SW 3rd Ave., Portland 4, Ore. (BEacon 6348); 121 2nd St., San Francisco 5, Cal. (GA 1-5887); 815 Witmer St., Los Angeles 17, Cal. (DUnkirk 9-1112).

SUBSCRIPTION RATES (for 12 monthly issues and WORLD REVIEW NUMBER, each year): United States, Canada, Mexico and other Pan American Union nations—1 yr., $3.00; 2 yrs., $5.00. Others—1 yr., $4.00; 2 yrs., $7.00
CHANGE OF ADDRESS: Please send subscription orders and changes of address to Subscription Dept., PULP & PAPER, 121 2nd St., San Francisco 5, Calif. Include both old and new addresses, and zone number.
ADVERTISING: All copy, plates, instructions and insertion orders should be sent to New York office.
PULP & PAPER is published monthly, except July when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Inc.
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Entered as second class matter, Dec. 4, 1951, at Post Office, Bristol, Conn., under Act of March 3, 1879. Postmaster: Please send Notice 3579 to PULP & PAPER, 121 Second St., San Francisco 5, Calif.

PULP & PAPER circulates all over the world—throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand, Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Italy, Netherlands, Portugal, Spain, Switzerland, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt, Turkey, South Africa, China, Hong Kong, Japan, Formosa.

COMMENT

A Pat on Back for Pulp Mills

Other state pollution commissions and conservation officials ought to pay heed to an example set for them in Wisconsin.

T. F. Wisniewski, chief of the Wisconsin pollution law enforcement agency, in an address given in Madison before the state medical society, praised pulp mills of the state for cleaning up their streams as a result of big investments they have made in treatment and by-product plants.

Criticisms of mills and orders issued against them always get the headlines. When the mills have made progress and done a good job, why can't the same critics speak out and give them credit where credit is due? Too often, the good work done by the mills never gets even a line of comment in the newspapers.

Mergers Are Helping Industries

"Mergeritis" has spread to the paper industry.

In the next six months, we may be sure that several dominantly family-owned pulp and paper companies will melt into stock combines with big companies.

Right now, in the South, there are at least two much-discussed big merger projects under way. There is a possibility that there will be four, before the trend subsides—that is, four big Southern mills which will become divisions of larger pulp and paper companies.

A New Deal metropolitan Chicago newspaper's financial editor recently wrote that these mergers are part of some subtle, back-room plot to eliminate competition. Nothing could be more unrealistic, but the anti-big business element can be expected to cook up such fantastic allegations.

These mergers are nearly all engendered because of the punitive inheritance taxation that is faced by enterprises owned by families.

But over and above this, most mergers so far have had far-reaching beneficial effects. They have made the merged enterprises more soundly integrated from tree to finished product or more economically and efficiently organized. It has aided some companies by placing them strategically in additional good market areas of the country for all their combined products.

Employes of these companies might well ponder these alternatives: A forced sale to satisfy taxes; even closure of some mills; declining raw material resources; and unbalanced production, which is very dangerous in slump periods.

A Guide to Industry Careers

An unusual service to this industry is the 80-page booklet, "A Guide to Career Opportunities in the Paper Industry," prepared by Beloit College in cooperation with APPA, and published and distributed under a grant by Beloit Iron Works.

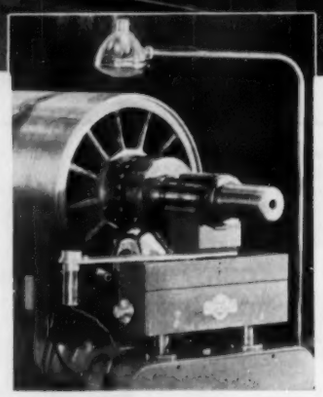
The booklet has gone to 57,000 libraries in colleges, schools and other institutions, and of course to many pulp and paper companies for their use. It can certainly be expected to do one grand job of enlightening young men and women of the favorable opportunities for satisfying careers in this industry (*now available—$20 for 250 copies*).

Raydyne

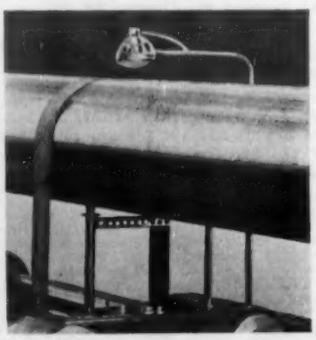
DYNAMIC BALANCING MACHINE

Locates and corrects for whip and unbalance in rolls of all sizes

A Raydyne Balancer in your maintenance shop means that your own workmen can balance rolls and rotors, regardless of dimensions, fast and accurately. Employs accurate new electronic-stroboscopic principles with seismographic mounting and universal V-bearings to fit any journal. Balances at any speed, indicating amount and location of necessary correction. Whip indicator shows position and amount of deflection. You will actually eliminate roll vibration, prolong life of bearings, reduce maintenance, and operate your mill at higher speed with less down-time. Also balances armatures, gears, flywheels, pumps and other rotors. Capacity up to 30,000 lbs. 30 feet between bearing centers. Balances for speeds up to 4000 f.p.m.



Seismographic suspension actuates stroboscopic light to indicate correction point in two planes.



Whip indicator reveals amount and position of deflection. Correction compensates for desired speed.

CHALLENGE US TO PROVE THE ABOVE STATEMENTS

Principles employed by the Raydyne machine are new, scientific and accurate but difficult to explain to laymen. That's why we welcome an opportunity to explain it further to your top technical men. Write for our folder, read it and discuss it with your top engineers. We invite you to visit our factory and see an actual demonstration. We are confident that you will be convinced.

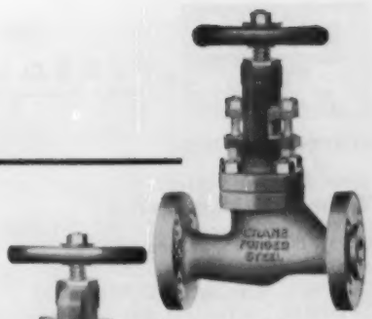
WELCH RAYDYNE

WELCH MANUFACTURING CO. SPRINGFIELD, ILLINOIS

unmatched in dependability

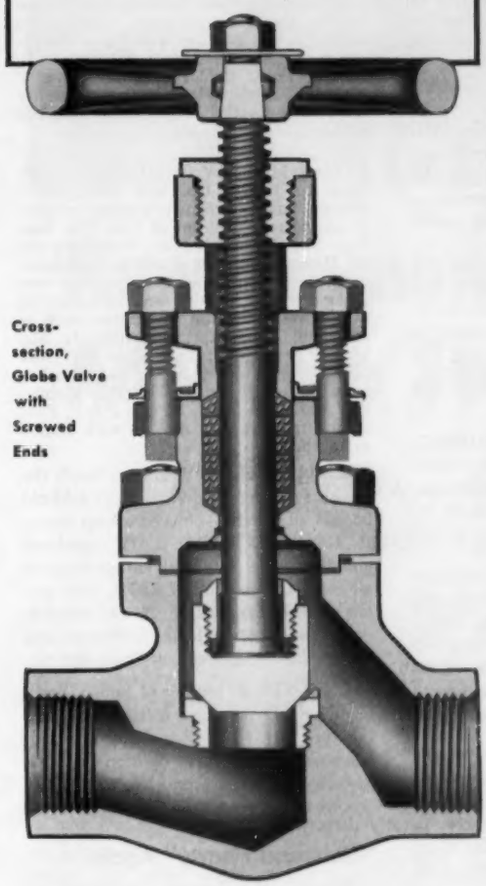
CRANE

chlorine valves



Flanged Ends
Globe and Angle Patterns

Screwed Ends
Globe and Angle Patterns



Cross-section, Globe Valve with Screwed Ends

now regularly available with screwed ends *and* flanged ends

Take your choice of patterns in these Crane chlorine valves. They're *Crane Quality* throughout—designed exclusively for water-free chlorine gas or liquid up to 300° F.

In the cross-section you can see their strong, rugged construction—and the narrow bearing 45° taper disc and seat design that provides positive closure. Corrosion-resistant materials are used at all critical points. Disc, body seat ring and disc stem ring are durable Hastelloy "C." The stem and the gasket at the leak-proof bonnet joint are Monel. In the extra deep stuffing box there's laminated packing specially developed for chlorine service.

You're better equipped for chlorine control with Crane chlorine valves. Sizes ½ to 2-inch.

FULL FACTS are in new 4-page folder AD 1976. Write direct or ask your Crane Representative next time he calls.

THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

PULP & PAPER PERSONALS

SOUTHERN NEWS

New Men in Dixie; Witham, Hulmes Injured

OMAR SQUIRES, veteran Southern representative for Shuler & Benninghofen in the South, was "squiring" **BILL WILLIAMSON,** his Portland, Ore., colleague on a tour of Dixie. Bill has represented the Hamilton-brand felts firm in the Far West for 35 years.

D. C. METCALF, Canadian-born pulp mill supt. of Brown Paper Mill Co., Monroe, La., was suddenly taken ill at the start of the Southern meeting in Asheville and was flown home with Mrs. Metcalf. Friends will be glad to know he is recovering nicely.

W. B. JENKINS, who recently became new paper mill superintendent for Crossett Paper Mills, has had 22 years unbroken service with the Crossett integrated wood operations, beginning long before the pulp or paper mill was added to lumber mill.

RALPH V. ZEPP, former asst. res. engineer, is new res. engineer of Rayonier Inc., Jesup, Ga., succeeding **W. C. RINDSLAND,** who resigned to accept a post in Minnesota. Mr. Zepp graduated from Minnesota and was formerly with M. & O.

A NEW MAN AND A VETERAN TOURING SOUTHERN MILLS

ROBERT S. DAVIS (left), Clemson College grad of 1950, who recently started touring Southern mills for Brandon Dryer Felts, out of Greenville, N.C. He was in purchasing dept. and quality control for Abney textile mills before going on road for its subsidiary Brandon Sales Inc., headed by Ken Fryfogle.

ROSCOE H. BROOK, JR., (right) is widely known in South as he has traveled mill circuit for 16 years. Now he lives at 24 Clover Lane, Montgomery, Ala., and is Southeastern Sales and Service Engr. for Ohio Knife Co., Cincinnati. Born in Mississippi, he graduated from Alabama in 1940, studied metallurgy later at MIT and Worcester Polytech. He formerly lived in Richmond, served another machine knife firm before joining Ohio Knife 5 years ago.

DR. FREDERICK B. SCHELHORN, formerly of Brown Co., Berlin, N.H., is now with National Container Corp., Jacksonville, Fla.

THE MOONS—Sirrine's pulp and paper chief, **D. G. MOON,** and his wife, **EDNA**—couldn't be kept from the engineers' convention despite her bad luck in suffering a broken arm, now well mended.

JOHN RUSCH, Dowell Inc. (chemical service company for Dow Chemicals), who is based in New Orleans, says he is no relation to **BOB RUSCH,** paper mill supt., Mosinee Paper Mills. John said he called on Bob a few years ago, when the latter was at International Paper, No. Tonawanda, N.Y., and they had an interesting visit.

GEORGE WITHAM, of Mobile, Ala., who represents **Orr Felt** in the South, also made the **Asheville** meeting under difficulty, as he was slowed down by a back injury, but he kept his long record of attendance intact.

HARRY HULMES, of Abington, Pa., Lindsay wire and Williams-Gray's representative, also suffered a back injury in fighting an accidental fire in his car, and he wasn't able to make Asheville to help lead in songs.

MR. and MRS. WILLIAM H. ROBERTSON, with many old friends in the Supts. group, enjoyed the **Asheville** gathering. With that name, what else could he be but a "Champion!"

THOMAS L. LALOR is new technical director of St. Mary's Kraft Corp., St. Mary's Ga., which is undergoing extensive expansion. He was color room group leader at Champion's Texas mill, where he went from Eastman Kodak three years ago. He is a graduate in paper technology from Syracuse.

HOMER L. (Slick) LUSBY and his wife have established their new home at 2153 Newberry Road, Jacksonville, where he was transferred a year ago by St. Regis to be paper mill supt. He has been with St. Regis 11 years.

SAM CROCKER, JR., sales manager for John W. Bolton & Sons, and Mrs. Crocker were able to visit her family who are residents at Pensacola, Fla., during his last swing through the South.

F. H. (Curly) SINGLETARY, Appleton Woolen Mills' man in the South, reported his brother, **GORDON,** mill manager at Brunswick, sent his regrets that he couldn't make Asheville.

ON JOB IN SOUTH— PAT YUNKER, LAMAR MURRAY

W. S. (PAT) YUNKER (left), who recently became Sales Engineer for E. D. Jones & Sons in South, has moved to a new address in Atlanta, Ga.—1460 Mt. Paran Road N.W., Phone Exchange 5638. Born in Springfield, Mass., he graduated from Middlebury College (Vt.) '31 and went on to the Paper Institute and Tulane U. for an industrial engr. degree. He started in this industry with Great Northern Paper, was Asst. Supt., Flintkote mill, New Orleans, before becoming P & P Mgr. for Foxboro. He represented another supplier in South before joining Jones. Is married, has 3 children.

LAMAR MURRAY (right), former Kraft Supt. at Brown Co. and Atenquique, Mexico, now has his own business interest in new Kraft Equipment Co., 704 East Bay St., Savannah Ga. Art DeSpain, 62 West 58th, New York, is associated with Mr. Murray and the new firm was created to offer design and manufacture in South of kraft mill equipment, such as screening, causticizing, agitation, etc. Mr. Murray graduated from LSU in 1937, was born in Moss Point, Miss., and also has been Digester Cook at H & W, Mobile, and Asst. Pulp Supt., Florida P & P, Pensacola (now St. Regis). Was with Impco in South, too.

THE RAY HARTERS, touring South (he is asst. sales mgr. for Vanderbilt) told old friends of their 3 now-grown-up sons—**R. EDWARD HARTER, JR.,** graduate architect from Yale and ensign in navy air force at Pensacola; **LEIGH,** who gets out of the air force Dec. 20 and plans to enter the paper school at Maine, and **JOHN,** in his last year at Annapolis.

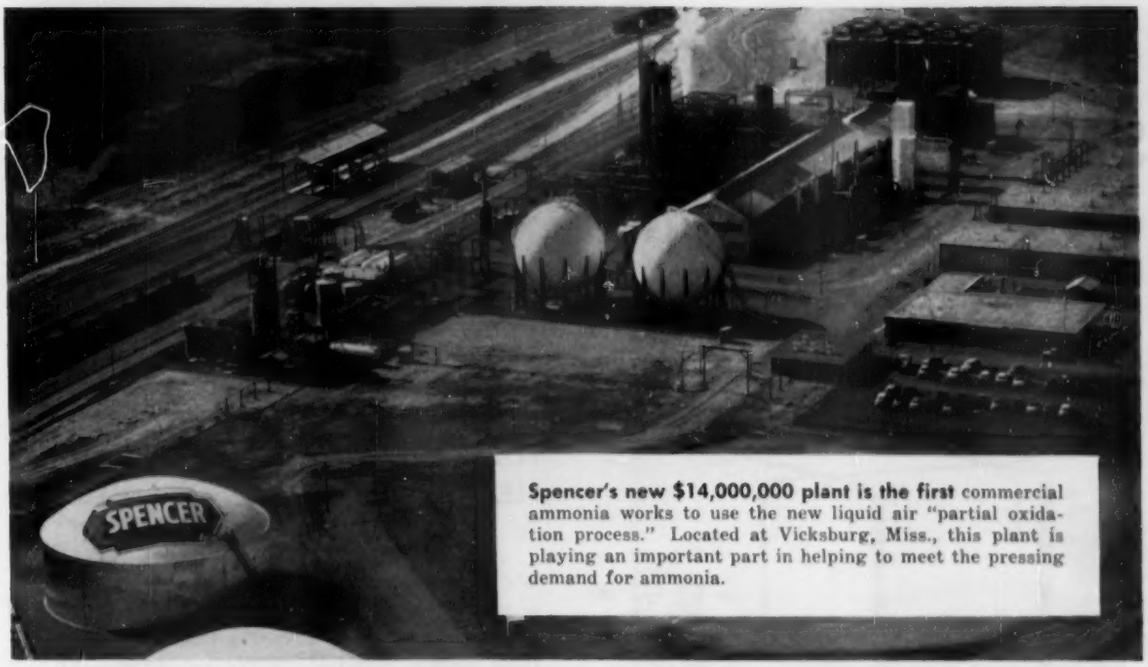
JACK JUSTICE, brother of famed North Carolina All-American football star and now pro star, Choo-Choo Justice, is with Champion's Carolina division and is YMCA exec. secy. there.

Murray Bennett Is "Hale and Hearty" Again

Murray H. Bennett, president of Chemical Linings Inc., Watertown, N.Y., has had the first experience in his entire life (except probably when he was born) of being in a hospital.

After touring the Midwest recently, he was forced to leave a high flying plane at Lansing, Mich., and take a short rest in a hospital there because of a mild heart ailment. He has returned home, and advises he is "hale and hearty again."

Continued on page 10



Spencer's new $14,000,000 plant is the first commercial ammonia works to use the new liquid air "partial oxidation process." Located at Vicksburg, Miss., this plant is playing an important part in helping to meet the pressing demand for ammonia.

New Ammonia Plants Assure Adequate Supply for Pulp Mills

You can now switch to ammonium bisulphite pulping with confidence

Lower costs and higher profits often await pulp producers who switch to the ammonium bisulphite process. Also the greater ease with which ammonia waste liquors can be evaporated and burned helps solve the increasingly urgent disposal problem.

Because operating conditions vary widely, it is customary to make a test run before committing the plant to permanent operation on ammonia base. Yet even where tests have clearly shown the advantages of ammonium bisulphite, some have hesitated to make the change because of the shortage of ammonia.

Huge new factories, like Spencer's $14,000,000 plant at Vicksburg, Miss., however, mean that adequate and reliable ammonia supplies are now available. Perhaps you would like to consider the merits of the ammonium bisulphite process.

If you have a question, we'll be glad to hear from you. No charge or obligation, of course. Just write: Technical Service Station, Spencer Chemical Company, Kansas City 5, Mo.

How ammonium bisulphite cuts costs, boosts profits:

1. Shorter cooking time.
2. Lower cooking temperatures.
3. Higher yields of pulp.
4. Hardwoods can be pulped.
5. Operation cleaner and more uniform.

SPENCER® SPENCER® SPENCER®

Spencer Chemical Company • America's growing name in chemicals

CORN PRODUCTS REFINING COMPANY MAKES A

starch to suit your specific needs

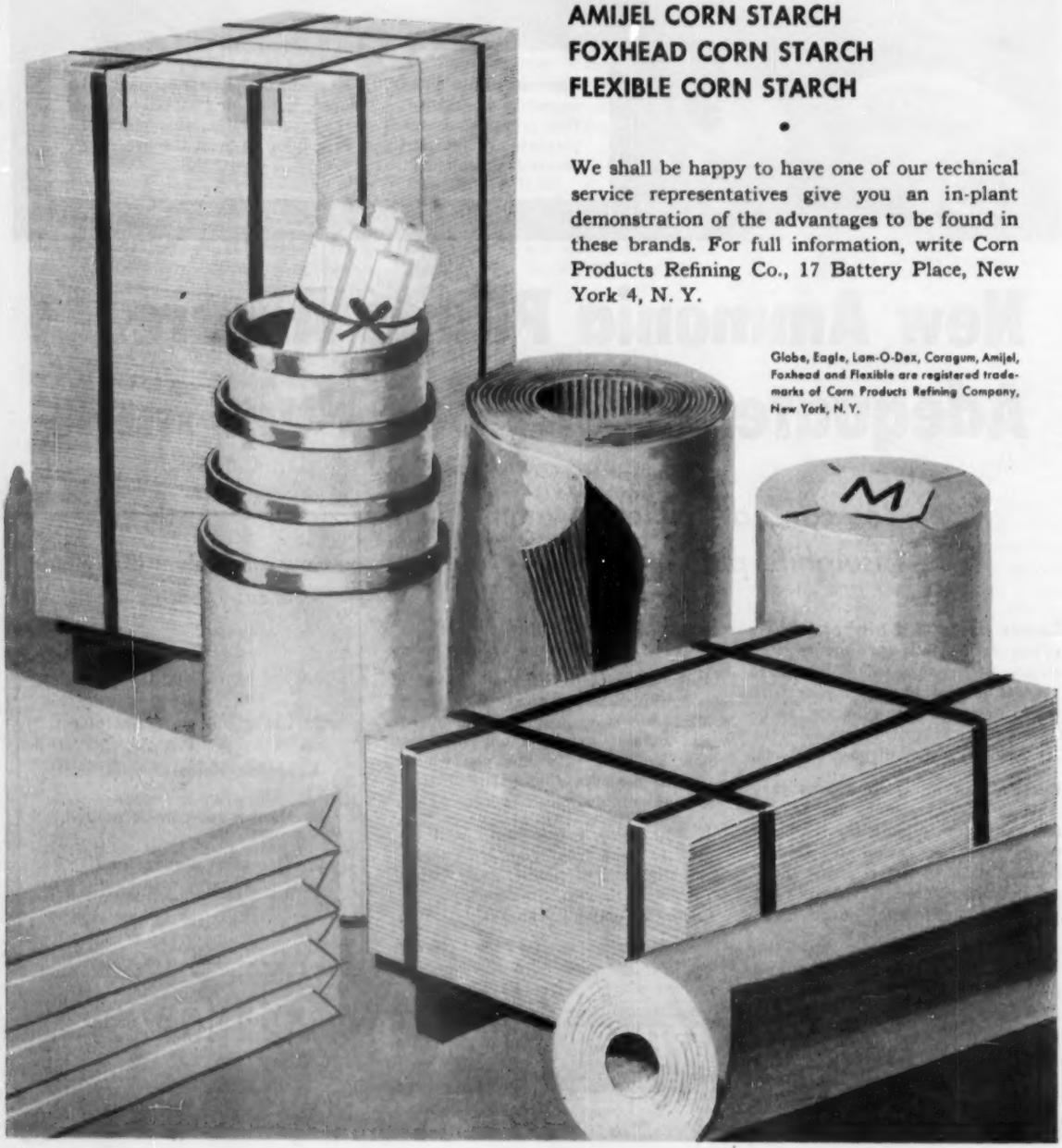
IN ONE OF THESE FAMOUS BRANDS:

HERCULES CORN STARCH
GLOBE CORN STARCH and DEXTRINES
EAGLE CORN STARCH
LAM-O-DEX
CORAGUM
AMIJEL CORN STARCH
FOXHEAD CORN STARCH
FLEXIBLE CORN STARCH

•

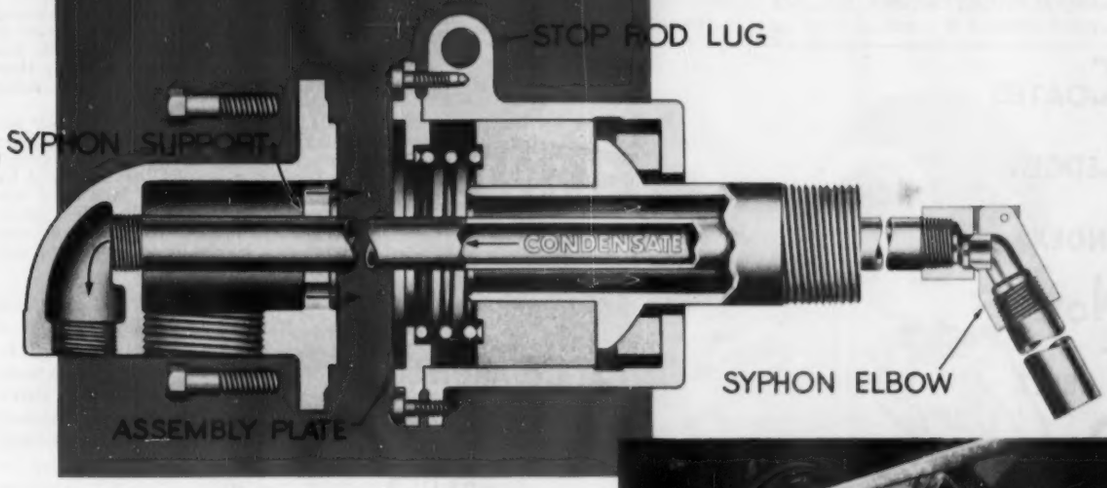
We shall be happy to have one of our technical service representatives give you an in-plant demonstration of the advantages to be found in these brands. For full information, write Corn Products Refining Co., 17 Battery Place, New York 4, N. Y.

Globe, Eagle, Lam-O-Dex, Coragum, Amijel, Foxhead and Flexible are registered trademarks of Corn Products Refining Company, New York, N. Y.



new angle ...to an old story

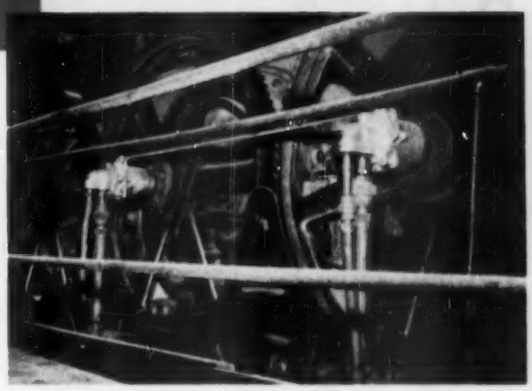
The New Johnson Syphon Elbow and Type SDP Johnson Joint



Curved syphon pipes can be a nuisance sometimes. They are hard to form, hard to handle, hard to keep in place.

The Johnson Mechanical Syphon Elbow changes all this. It permits use of straight pipe . . . can be inserted or withdrawn right through the joint . . . seats by its own weight when in position.

In the picture above you see this new syphon elbow as teamed up with the Type SDP Johnson Joint—perhaps the most popular combination of its type in the paper industry. It needs no external supports of any kind. It is completely packless and self-lubricating. A special assembly plate holds internal parts in position when head is removed with the syphon pipe.



TYPE SDP JOHNSON JOINTS, with ¾" syphon elbows, installed on paper machine. Joints need no external supports. Syphon elbow can be inserted or withdrawn through the joint, in many cases while machine is operating.

We'll gladly furnish a couple of units for 90 day trial right in your own plant. Write for full information.

Products of The Johnson Corporation
845 Wood St., Three River, Mich.
Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

NORTHEAST NEWS

Hollingsworth on Board
Des Marais Buys Home

AMOR HOLLINGSWORTH, JR., president and director of Tileston & Hollingsworth Co., was recently elected a director of Old Colony Trust Co., Boston, Mass. Mr. Hollingsworth is married, has three daughters and lives in Westwood, Mass.

SAMUEL KIPNIS, president and co-founder of National Container Corp., was surprised recipient of a cocktail party on his 68th birthday Oct. 25. He has been the only president of NCC since its beginning 26 years ago.

GEORGE INGRAM, JR., has been named controller, Riegel Paper Corp. He will continue to be located at their Milford, N.J., mill.

MAURICE LONDON, v. p. of Hudson P&P, is new consultant on loan to the Pulp, Paper and Paperboard Section, Business and Defense Services Administration in Washington, D.C.

COATED
LEDGER
INDEX
NOTE
TABLET
OFFSET
NOTION BAG

FOLDER
ONION SKIN
OYSTER PAIL
DRAWING
SAFETY

INSULATING
NOVEL
CORRUGATED

CLINTON

STANDARDIZED

STARCHES

FOR USE IN THE

MAKING OF HIGH-

GRADE PAPERS

AND BOARDS

Technical Service in connection with your specific problems is available upon request.

CLINTON FOODS INC.

Corn Processing Division

CLINTON, IOWA

GOES SOUTH FOR BIRD; MANAGES B-D PROCESSES

ROBERT G. MILLER (left), who has established a new Sales Office in South for Bird Machine Co., at 1134 Clairmont Circle, Decatur, Ga. (suburb of Atlanta). His phone is Evergreen 7249. He has been a Bird Sales Engineer for years, operating out of Evanston, Ill. He was educated at Universities of Mass. and Maine. He was Chief of Rehabilitation in an Army Hospital. With Bird, he has made many Southern mill calls.

WILLIAM L. KRAPF (right), newly appointed Gen. Mgr. of Bulkley, Dunton Processes, Inc., manufacturers of Colloidal Separators, New York, as announced by Fred Enders, President. Mr. Krapf was formerly Asst. to Exec. Vice Pres. Before joining B-D Processes, he was Sales Engineer with United Board & Carton and Bulkley-Dunton Pulp Co.

CLARENCE F. KINGSTON, paper mill supt., Hammermill, is new chairman of the Penjerdel Div. of Supts. Assn. CLETUS COFFMAN, supt., Chesapeake Paperboard, Baltimore, is first vice; JOHN H. RICH, asst. mgr. of Riegel's Milford mill, is second vice; GUS CRAWFORD, plant engineer, Continental Paper, is third, and JOHN MANLEY, Lockport Felt, is sec.-treas.

LEWIS R. PARKER, president, Albany Felt Co., announces promotion of JOHN C. STANDISH to exec. vice pres., WAYNE G. DAVIS, to vice pres., continuing in charge of felt sales, and HAROLD F. HEDBERG to vice pres. in charge of research and development.

HUBERT A. (GOB) DES MARAIS, who heads Geigy Industrial chemicals sales for this industry (NYC) has moved his family in a new home at Chatham, N. J.

WILLIAM G. LUKE, of West Va. P&P Co's. sales, retired after 45 years with the company. He will continue as a director.

RUSSELL LUERS, formerly asst. supt., West Jersey Paper Mfg. Co., Camden, N.J., is new production supt. He succeeds the late WILLIAM H. MATEER.

GEORGE L. FORSYTH, former sec'y and mill manager, Kelly-Forsyth Paper Corp., Port Leyden, N.Y., has joined National Aluminate Corp., as service representative. He will headquarter in Watertown, N.Y., servicing New England and most of N.Y.

Continued on page 14

Asten DRYER FELTS

Can down-time be avoided?

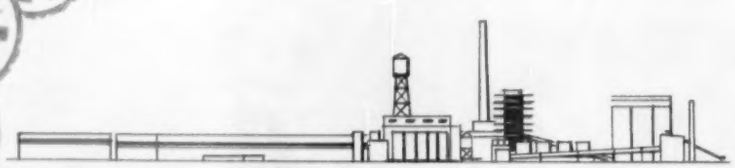
If frequent clothing changes are slowing your schedule, it is high time to consider the quality of your felts. The unique construction of ASTENS and the care with which they are made can very well be the factors that will minimize costly down-time.

Economy in the long run

ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.

ASTEN-HILL LIMITED
VALLEYFIELD, QUEBEC

We can't repeat it too often .....



ET IS THE MARK of QUALITY

- Our new mill is one of the few designed to utilize the new Mathieson chlorine-dioxide bleaching process that produces a very "high brightness" pulp, exceptionally clean, and with retention of full strength characteristics.

- Use of a completely new and revolutionary machine coating produces the industry's finest printing surface.

MARKET PULP in two grades

EASTEX market pulp comes in two grades: a long-fibered grade made from pine, a short-fibered one made from gum. Both are bleached to a high brightness and offer exceptional cleanliness with maximum strength.

BOARD AND PAPER tailored to your needs

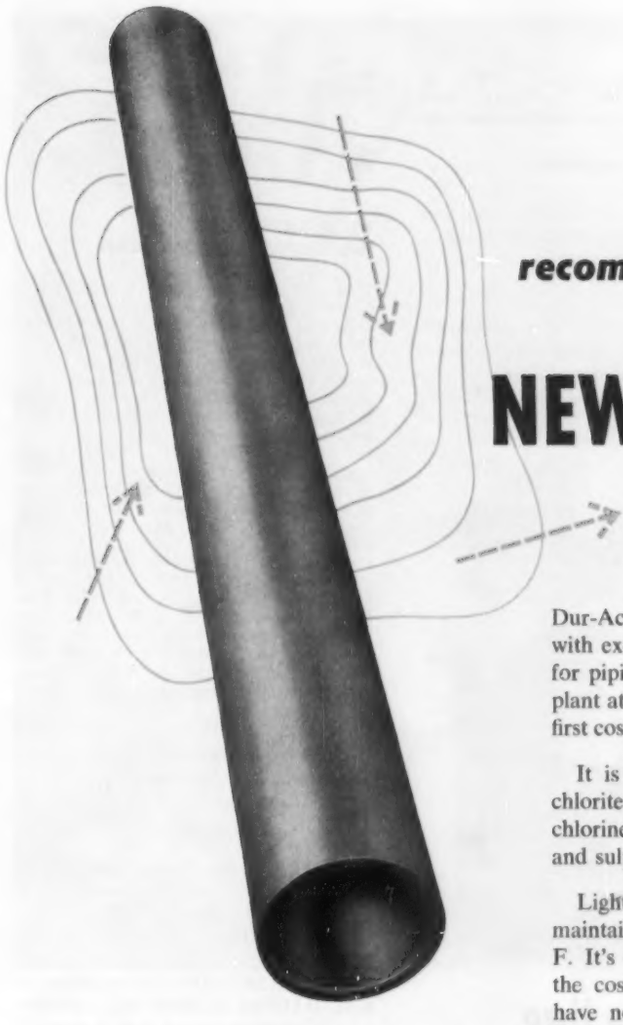
Tell us your requirements—we'll produce a board or paper to meet your exact needs as to workability, printability, strength, brightness, and moisture resistance.

EAST TEXAS
Pulp and Paper Company

Evadale, Texas

Telephone Silsbee, Texas: Evergreen 5-3711

Eastern Sales Office, 122 East 42nd Street
New York City



recommended for bleaches . . .

NEW DUR-ACE PIPE

a tough, corrosion-resistant plastic with a good cost factor

Dur-Ace is a new corrosion-resistant, rigid plastic pipe with exceptional impact strength and toughness . . . good for piping practically all bleach liquors and acids in your plant at ordinary temperatures and pressures . . . with low first cost and long life.

It is now successfully handling alums, calcium hypochlorite, aluminum sulphate, peroxide to 3%, chlorine gas, chlorine dioxide, and other bleaches . . . also hydrochloric and sulphuric acids, pulping effluents, and white water.

Light in weight, Dur-Ace is non-contaminating, and maintains good strength from minus 40 deg. F. to 170 deg. F. It's corrosion-resistant on the *outside*, too, and saves the cost of painting. Electrolytic corrosion and bacteria have no effect on Dur-Ace, so it's excellent for underground lines handling chemicals, water, brines, fueloil, etc.

Successful field installations of thousands of Dur-Ace molded fittings have been made. We have job-proved performance data covering a wide variety of corrosives. Dur-Ace pipe is available in sizes from ½ to 2", Standard and Extra Heavy, with a wide variety of fittings.

***Dur-Ace** is the* eighth *basic type of corrosion-resistant pipe available from ACE . . . including materials for high pressures, high temperatures, strong acids, organic solvents, etc., and pipe sizes to 24" and above. Consult ACE first with any corrosion problem.*

CHEMICAL RESISTANCE AT 77 DEG. F.

SATISFACTORY		LIMITED	UNSUITABLE
Acetic Acid 10%	Ferric Sulphate	Formic Acid 20%	Acids stronger than
Hydrochloric Acid 30%	Salts of Calcium,	Hydrofluoric Acid 10%	listed at left
Sulphuric Acid 50%	Sodium, Potassium,	Nitric Acid 10%	Aromatic Hydrocarbons
Ammonium Hydroxide 28%	Ammonium, etc.	Phosphoric Acid 50%	Chlorinated Solvents
Calcium Hydroxide	Bleaches	Alcohols	Esters
Sodium Hydroxide 20%	Most Plating Sols.	Vegetable Oils	Ketones
	Oil (SAE 10-30)		

WRITE FOR BULLETIN 80A TODAY.

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY
93 WORTH STREET • NEW YORK 13, N. Y.

PERSONALS — Continued

PACIFIC COAST NEWS

Jess Bonnar Dies; Also Fred Stevey

WALT MILLER's promotion to res. manager, Scott's Anacortes pulp mill, opened the way for **WAYNE A. NICHOLS,** temporarily asst. plant engineer at the Empire, Ore., mill to succeed Mr. Miller as Anacortes plant engineer. **R. I. THIEME,** succeeded by Mr. Miller, went east to become asst. plant mgr., Chester, Pa.

JESSE W. **BONNAR,** chief engineer for 32 years of Fibreboard Products Inc., Port Angeles, Wash., died suddenly Sept. 11 at Mt. Vernon, Wash., having lived near there (E. Standwood) since retirement in 1952.

JAMES G. BALDWIN, of Arcadia, Calif., is new manager of industrial ammonia sales for Brea Chemicals, subsidiary of Union Oil of Calif. **JACK R. KELSALL,** of Seattle, formerly with Longview Fibre Co., is Pacific Northwest industrial rep for Brea.

teaching a wire to toe the line...

It's model 706, new Gilbert & Nash Hydra Guide with rotary palm* for wire, wet felt, and dryer felt service. Shown in actual use—now in its second year—at Sorg Paper Company, Middletown, Ohio, #6 machine, Smith mill.

High speed machines—even variable speed machines—are no handicap to model 706. Its guide roll moves only in a *horizontal* plane to avoid undue wire stretch . . . continuously corrects at a plus or minus 1/64 inch . . . eliminates over-correction or hunting.

Hydraulically operated by water pressure—where filtered water pressure is 40 to 60 lbs.—or by oil pressure with a pump of one gallon per minute capacity. Send for free Hydra Guide folder or, at no obligation, write for a Gilbert & Nash representative to call at your mill.

GILBERT and NASH APPLETON, WISCONSIN

* Manufactured and sold exclusively by The Appleton Machine Company

ESCO SALES CHIEFS AND NEW MIDWEST MAN

Two men at left now head Electric Steel Foundry Co's (Portland, Ore.) worldwide sales and service—at right is new Middle West Representative. L to r: R. W. DE WEESE, Vice Pres. in Charge of Sales. Spent 14 years in many Esco depts., including Mgr. of High Alloys Div., Asst. to Pres., head of Metallurgical and Inspection Depts.
JEFFERSON J. DAVIS, Vice Pres. in charge of Product Division. Joined Esco in 1936, was Mgr. of Construction Equipment Division, and before that co-managed Logging Rigging Div., and headed Eugene, Ore., office.
EARL CARRIER, newly appointed Middle West Rep., Electric Steel Foundry Co., 712 Porter St., Danville, Ill. His home remains at Route 5, Box 241, Oshkosh, Wis. He will call mainly on pulp and paper mills, regarding Esco's stainless steel specialties such as valves, fittings, piping etc. He is married, has 3 children.

GLENN R. SPICER, Hammermill Paper, Los Angeles, heads SAPI's new section in Southern Calif. He assures it will not conflict with the Paper Mill Men's Club of So. Calif.

BOB BAER, Griffith Rubber Mills, is new president of W.R. 1 of the Brotherhood of Migratory Peddlers in Portland, Ore. **JACK WILCOX,** Esco, is v.p., **H. B. PETERSEN,** Hercules, is sec'y, and **WALT SALMONSON,** Draper felts, is treas. **HALVAR LUNDBERG,** engineering consultant, is pres. of W.R. 2, Seattle, where **AL QUINN,** Stebbins, is v.p., **RUSS VOGNILD,** Hooker, sec'y, and **CHES PEDERSEN,** Esco, treas.

Alan Dunham Dies

Alan C. Dunham, 68, of Portland, Ore., died of heart attack Sept. 7 at his summer home on Deka Lake in British Columbia. A Portland resident 25 years, Mr. Dunham was West Coast representative for Lockport Felt and Cable wires.

C. FRED STEVEY, for many years supervisor of CZ Camas electrical department and retired since 1950, died in late October.

At the National Safety Congress in Chicago, were **JACK ROBERTSON,** Crown Z, Camas; **VIC GAULT,** CZ Portland, **BOB GILMORE,** Rayonier, Hoquiam, **L. O. REISINGER,** St. Regis Paper, Tacoma, **CHICK NORDSTROM,** Everett Pulp at Everett.

Continued on page 18

Mathieson Caustic Soda: *why settle for less?*

In the lime-soda process—one of the two important methods of making caustic soda—the causticizing operation begins in huge settling tanks like those above. Here, a soda ash solution is treated with milk of lime, calcium carbonate is precipitated and a dilute caustic liquor obtained. This liquid is then filtered and concentrated to the commercial 50% and 73% solutions, as well as to the solid, flake, and granular forms. Lime-soda process caustic is produced at Lake Charles, La., and Saltville, Va.; four other strategically located plants produce electrolytic process caustic to make Mathieson a major source of this essential chemical raw material.

Multiple-process and multiple-plant facilities give Mathieson's caustic soda customers the dependability they want. It means their source of caustic is not controlled by seasonal fluctuations in chlorine demand as is sometimes the case when production is limited to the electrolytic caustic-chlorine process. This operational flexibility is also typical of other Mathieson chemicals—5 chlorine plants, 7 sulphuric acid plants, 3 alkali plants, 3 ammonia plants, provide a safety factor that assures a reliable source of chemical raw materials.

Call on us when planning current or future chemical requirements. Perhaps you can buy to better advantage from one of America's largest producers of basic industrial chemicals.

MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION · BALTIMORE 3, MD.

2761

MATHIESON

CAUSTIC SODA · SODA ASH · CHLORINE · SULPHURIC ACID · SULPHUR · AMMONIA · NITRATE OF SODA · BICARBONATE OF SODA · NITRIC ACID · SULPHATE OF ALUMINA · SODIUM CHLORITE PRODUCTS
ETHYLENE OXIDE · ETHYLENE GLYCOL · DIETHYLENE GLYCOL · TRIETHYLENE GLYCOL · POLYGLYCOLS · DICHLORETHYLETHER · ETHYLENE DICHLORIDE · METHANOL · SODIUM METHYLATE · ETHYLENE DIAMINE

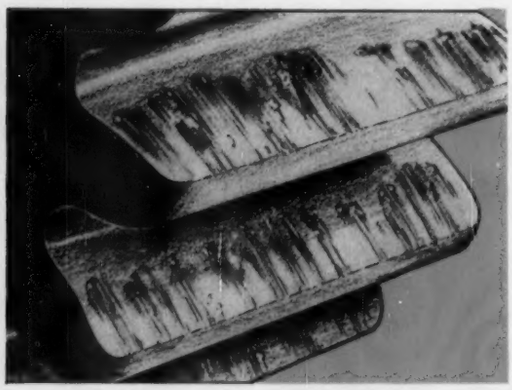
switch to

GULF E.P. LUBRICANTS

and get the benefit

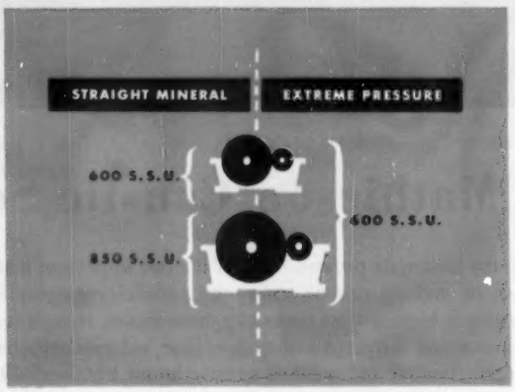
1 **More effective protection against tooth scoring and welding**

Gulf E. P. Lubricants have proven ability to protect gear teeth against damage by scoring and welding. They are specially compounded to provide extra film strength and to prevent metal-to-metal contact under most conditions of overload and shock load. That's why you can usually avoid tooth damage like that shown at the right when you use Gulf E. P. Lubricants. And that's why they provide an extra margin of protection when production demands approach or exceed the rated capacity of the equipment.



2 **Fewer lubricant grades needed— lubricant storage and handling simplified**

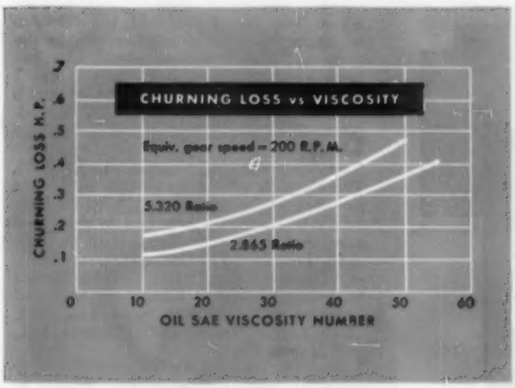
Because Gulf E. P. Lubricants have superior film strength, it is often feasible to use a lower viscosity grade than would be possible with a straight mineral oil. This is a practical advantage for plants operating several different types of gear drives. If, as pictured at the right, two straight mineral oils of different viscosity are specified, one grade of Gulf E. P. Lubricant may well do the job of both. Thus lubricant storage and handling is simplified, and there is less chance for confusion in the oil house.



Gulf E. P. Lubricants are available in the proper viscosity for every gear requirement, ranging from 55 to 1000 SUV at 210 deg. F. For specific recommendations for your equipment, call in a Gulf Sales Engineer. Write, wire, or phone your nearest Gulf office, or send the coupon.

for enclosed gear drives

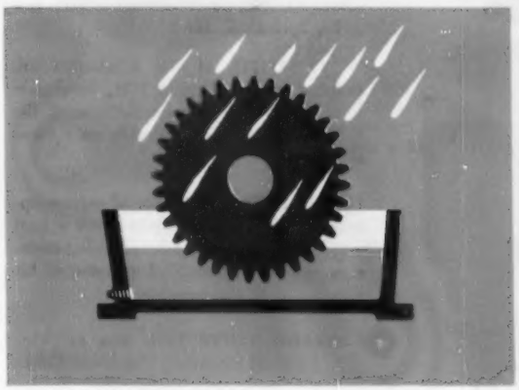
of these practical advantages:



3 **Reduced power loss caused by churning in splash-lubricated units — lower power costs**

There is another advantage in using a lower viscosity oil in splash-lubricated units where power loss due to churning is appreciable. Since this loss is almost directly related to oil viscosity, the use of lighter Gulf E. P. Lubricants often means reduced heat generation and lower power costs.

The chart at the left shows the effect of viscosity on the churning loss in horsepower of a typical gear unit.



4 **Excellent protection against rust**

The ability to protect polished gear teeth and antifriction bearings against rust is an important property of a gear lubricant, and is essential in a lubricant for units which are occasionally idle.

Gulf E. P. Lubricants have highly effective rust preventive properties—insure against excessive wear and enlarged tolerances which might result from the presence of abrasive rust particles.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION • GULF REFINING COMPANY
1822 Gulf Building, Pittsburgh 30, Pa. P&P

Gentlemen:

I would like further information on Gulf E.P. Lubricants:

- ☐ Please have a Gulf Sales Engineer call.
- ☐ Please send me a copy of your pamphlet "Gulf E.P. Lubricants for Reduction Gear Drives."
- ☐ Please arrange to show a group in our plant the new Gulf Color Slide Film, "Gears and Their Lubrication," Part I.

Name_____

Company_____

Title_____

Address_____

MIDDLE WEST NEWS

Fowler Directs Nicolet; Tip Mullin is Honored

HENRY FOWLER is new general mgr. and a director of Nicolet Paper Corp., West de Pere, Wis., announces Vice Pres. ARTHUR SNAPPER. He succeeds the late BERT LEWIS. HERBERT WENBERG, former tech. supt., succeeds Mr. Fowler as asst. gen. mgr.

JOHN L. (TIP) MULLIN, v. p. and gen. mgr. of Hopper Paper Co., Taylorville, Ill., was honored as "Papermaker of the Month" in a recent issue of Noble & Wood's *Agitator*, which described him as "motivating genius" behind rejuvenation of once run-down mills of Taylorville and Reading, Pa. He has been in the industry since 1910.

JAMES R. WELLMAN is new director of American Cyanamid's new paper chemicals application laboratory, Chicago, Ill.

"From ingot to fourdrinier wire"

ANNEALING THE WIRES

Just as one alloy differs from another, so do their individual requirements for annealing vary. A definite ratio of speed and temperature must be used for each type. Skilled employees, tending our modern annealing furnaces, adhere faithfully to the proper speed-heat formulae so that your Eastwood wire will have the longest possible life.

Because the Eastwood-Nealley plant is a *completely integrated* one, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.

We are proud to say they are *truly* ours—"from ingot to fourdrinier wire".

EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.

BAUER STAFF GROWS; CARL PLUMLEE JOINS

Bauer Bros. Co., Springfield, O., has been widening its field of applications in the pulp and paper industry, and also has been augmenting its staff. Now it has 7 field men in U.S. and Canada in touch with mills and another staff of 7 specialists working out of Springfield, going anywhere needed.

Top; JOSEPH C. SHOUVLIN (left), President, is giving some tips to newest member of latter group—CARL PLUMLEE, who will be attached to sales and service staff in Springfield. Born in Oakdale, La., Mr. Plumlee was Gen. Supt., of Fleming mill in Dallas, Tex. He started as broke hustler at Elizabeth, La., mill in 1927, and was Asst. Supt. and Supt. in mills at St. Helens, Ore., Crossett. Ark., and Macon, Ga.

Below: ROGER SHOUVLIN (left), V.P. from Springfield, greeted by JERRY A. LE VAN, Sales Engineer for Bauer in South. Mr. Le Van is located at P.O. Box 2065, Springhill, Ala.

B. F. SMITH, of the Kimberly-Clark pulping group, Neenah, Wis., headquarters, and his wife recently toured the Smokies, Georgia and Florida on a vacation.

HARRY PIERCE, director of service operations, K-C, Neenah, was given a boat compass by purchasing, planning-materials and traffic personnel in honor of his 25 years with the company.

RICHARD GROWDEN, son of Vice Pres. Leonard Growdon, The Mead Corp., returned to Mead's Chillicothe division engineering after two years in the army.

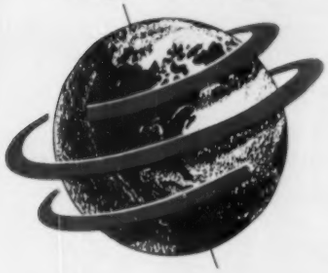
Dard Hunter Museum Arrives in Appleton

The famed Dard Hunter Paper Museum has arrived at its new home, the Institute of Paper Chemistry, Appleton, Wis. Three vans brought it from MIT, Cambridge, Mass. In charge of moving was George Graham, IPC administrative coordinator.

Mr. Hunter will spend part of December directing arrangement of the exhibit in the subbasement of the General Activities Bdg.

Continued on page 22

Over 750 Installations in 22 Countries Throughout the World



Morden-ize

THE 3 BASIC TREATMENTS IN YOUR STOCK PREPARATION

EACH STOCK requires one or more of these basic treatments.

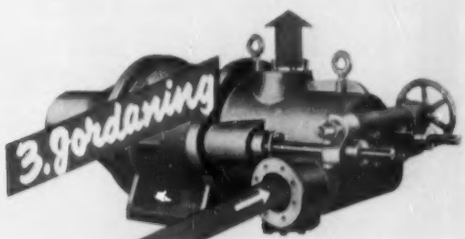
EACH MORDEN MACHINE is engineered, standardized and proven in one of these basic treatments.

EACH MILL'S requirements suggest various applications.

OUR EXPERIENCE in assisting mills to develop simple, effective and economical stock preparation systems is available to you upon request.

SLUSH MAKER®

...for completely defibering all pulps, papers and brokes (even wet strength) without auxiliary equipment.



STUFF MAKER

... for cutting or shortening where required to obtain specific sheet properties.

STOCK MAKER®

...for brushing, fibrillating and hydrating individual fibers for maximum strength development.

MORDEN
STOCK PREPARATION EQUIPMENT
MACHINES COMPANY

3420 S.W. MACADAM AVE. PORTLAND, OREGON

Northeastern States Representatives:
ORTON CORPORATION, Fitchburg, Massachusetts

Midwestern States Representatives:
DAN B. CHAPMAN, Appleton, Wisconsin

Other Representatives in most paper-making countries.

Johns-Manville Special Packing Recommendations for pulp and paper mills

Service	Reciprocating Rods and Plungers: Large Packing Space	Reciprocating Rods and Plungers: Small Packing Space	Centrifugal & Oscillating Rods	Valve Stems
Ground Wood Pulp				
Pocket Grinder Cylinders Cold Water Rods	#190 Navalon® #189 Flax #271 Cross Diagonal	#190 Navalon #189 Flax #271 Cross Diagonal		
Pistons	#182 Aqua, #33 Universal, Moulded Packing Cups		#253 Interlocked #19 Centripac #240, #181 Flax, no Graphite	
Pulp Pumps	#253 Interlocked #19 Centripac® #240, #181 Flax, no Graphite	#253 Interlocked #19 Centripac #240, #181 Flax, no Graphite		
Sulphite Pulp Acid Pumps Valves Digester Pumps and Valves	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac®	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac	#640 Plastic with end rings of #379 Flexible Metallic #2012 Chempac
Sulphate and Soda Pulp Caustic Pumps and Valves Digester Pumps and Valves	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic
Recovery Process Black Liquor Pumps Evaporaters Green and White Liquor Pumps and Valves	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic
Bleach Room Bleach Liquor Pumps & Valves	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic	#254 Interlocked #2021 Caustic
Chlorine Pumps and Valves	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid	#2013 Chempac or #2017 Acid
Machine Room White Water Stock Pumps	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac
Jordans and Refiners Stock Chests			#253 Interlocked #19 Centripac	#253 Interlocked #19 Centripac

Johns-Manville provides the right packing for every application

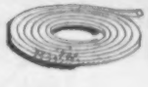
Johns-Manville, pioneer in packings for over 80 years, offers a full range of packings specifically designed for pulp and paper mill service.

For example, new J-M Chempac, impregnated with chemically resistant Teflon*, withstands chlorine, sulfurous acid, black liquor and all other corrosive chemicals encountered in pulp and paper mills. Other J-M Packings such as J-M Plastic Packing provide effective sealing with low friction, for high-speed rotating shafts. And of course J-M Interlocked braided packings have had an outstanding record of performance in general service for many years.

All J-M Packings help keep equipment in service longer, reduce maintenance and downtime for packing replacement. Your near-by J-M Packing Distributor carries stocks for your replacement needs.

To secure your free copy of the J-M Book on packing recommendations, simply write Johns-Manville, Box 60, New York 16, N. Y.

J-M Interlocked Braided Rod Packing



J-M Chempac Teflon-protected Packing

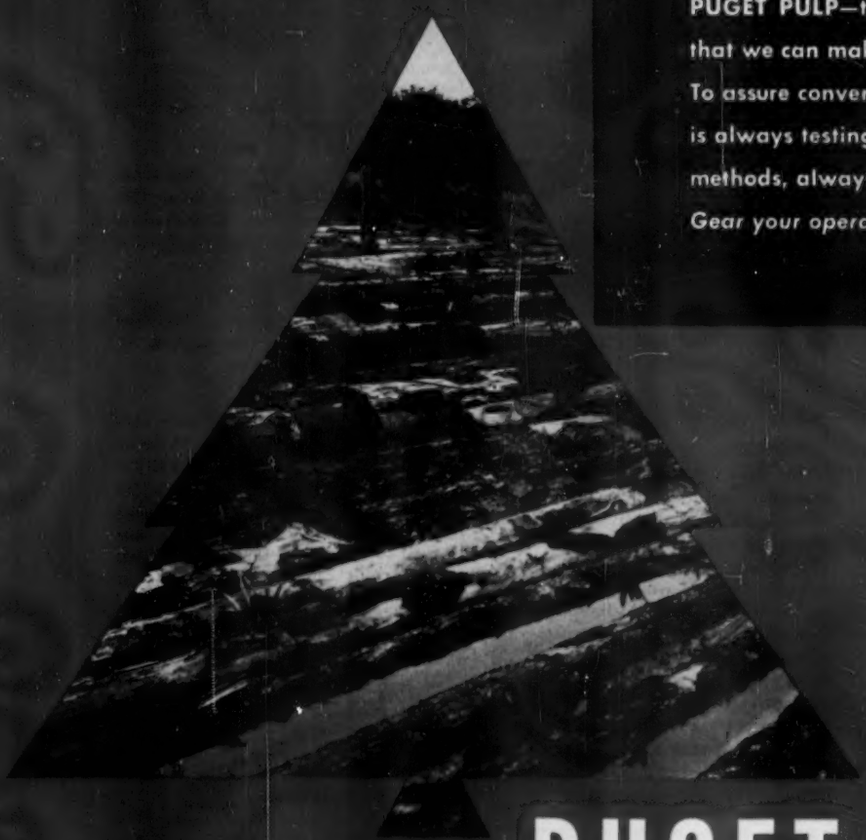
J-M Plastic Packing

J-M Centripac Rod Packing

*Trade Mark for Du Pont Tetrafluoroethylene resin.

JOHNS MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS



PUGET PULP—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***

PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM · WASHINGTON

MIDDLE WEST NEWS

STAN F. ALLISON, container div. gen. mgr., and **N. A. GEORGE,** industrial and public relations mgr., were elected vice presidents of Ohio Boxboard Co. Mr. Allison, a U. of Minnesota grad, joined Ohio in 1945. Mr. George, a Washington U. grad, joined this year.

RUDY MEYER long retired former supt. at Badger Paper Mills, Peshtigo, Wis., was married recently.

DR. PHILIP LUNER, U. of Montreal honor graduate and McGill U. Ph.D., 1951, lately in Canadian industry research, has joined the Institute of Paper Chemistry. He specializes in sulfite liquor problems. **DUANE K. HIGGINS,** analytical chemist from Carter Ink Co., also is a new staffer at the Institute.

GEO. GRAHAM, Institute of Paper Chemistry administrative coordinator, is in charge of Community Fund collections from Appleton mills and plants.

OSBORN JOINS LOCKPORT; NEIGHBORS, PENNSALT

HUGH C. OSBORN (left), with several years experience already behind him as a Pacific Coast representative for R. T. Vanderbilt and General Dyestuff, is new Far West Representative for Lockport Felt Co. His office is 1220 S.W. Stark St., Portland 5, Ore., and his home, 4309 S.E. Sherman, Portland. He succeeds the late Alan C. Dunham. Graduate of Newton Falls, N.Y., high in that paper mill town, he got his C.E. degree at Clarkson in 1948, after time out for Navy service in the Pacific war theater. He worked at Newton Falls mill before joining Vanderbilt. He married in West, his wife being from Camas, Wash.

JOSEPH C. NEIGHBORS (right), grad. of USC and experienced in industrial chemical sales, is new Los Angeles District Sales Mgr. for Penn Salt Mfg. Co. of Wash. He's a former General Chemical Co. Asst. Sales Mgr. Announcement came from LeROY M. SHANAMAN, Heavy Chemicals Sales Mgr., who moved his headquarters from Portland, Ore., to Tacoma, Wash., recently in move to simplify administration.

BERNARD VAN CAMP, with Seabees in the Pacific War and Oshkosh State College grad, is new yeast plant control chemist at Charmin Paper Mills, Green Bay.

ROBERT E. POHL, vice pres., The Mead Sales Co., died recently in Dayton, O. Was with Mead for 30 years.

GERARD E. VENEMAN is new vice pres. and director of sales for Nekoosa-Edwards and **CARL A. SCHIEBLER** succeeded him as general sales mgr. The former had many years in meat industry sales before joining Nepco in 1949, and Mr. Schiebler started in Kimberly-Clark manufacturing and joined Nepco sales in 1936.

TED DUNN, president, Dunn Paper Co., with 60 years in the industry, enjoyed a recent Michigan Supts. Old Timers Reunion in his honor, where he was awarded a life membership in Supts. Assn. His son, **GEORGE C. DUNN,** exec. v.p. of Dunn Paper, was present.

DICK VECHINSKI, GEO. ASHBURN and **DON PETERSON** are new Nepco Port Edwards mill foremen, respectively, for maintenance, paper and sulfite.

Continued on page 26

TC TENNESSEE CORPORATION

SULPHUR-DIOXIDE
Is RIGHT
For YOUR JOB!

SULPHUR-DIOXIDE
HIGHEST QUALITY
SO_2

Samples, Specifications and Detailed Information on Request.

If you have a job that calls for a superior reducing or bleaching agent, antichlor, pH control or neutralizer . . . Tennessee's highest quality Sulphur Dioxide will do it better. Usually a more efficient and economical operation can be had through the use of this chemical (SO_2) with its varied and extended uses.

Let our technical staff show you how you might employ Tennessee's highest quality Sulphur Dioxide to greatest advantage.

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

IS YOUR MILL

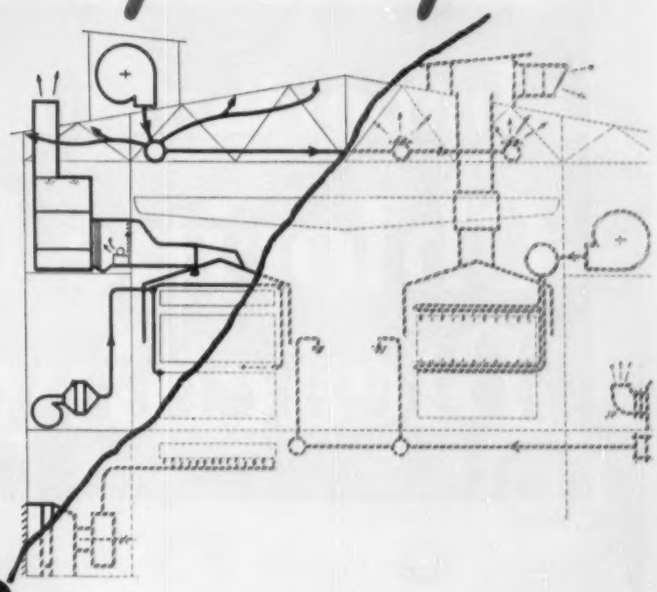
Just Limping Along

WITH ONLY

1/2

OF AN

AIR SYSTEM?



(Over 30% of the Industry's Mills Are!)

It could prove profitable for you to contact J. O. ROSS ENGINEERING CORPORATION and have an experienced engineer survey your mill to determine if the AIR SYSTEM is consistent with current production. Nowhere in the mill can you spend money with greater return than for AIR applications.

ROSS SYSTEMS

J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

444 MADISON AVENUE NEW YORK 22, N. Y.

ATLANTA • BOSTON • DETROIT • CHICAGO • SEATTLE • LOS ANGELES

ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

Stebbins Linings...

Important in Chlorine Dioxide Bleaching

Approximately 90% of the pulp bleached with chlorine dioxide in plants now operating or under construction will be processed in equipment lined by Stebbins.

Stebbins-lined chlorine dioxide reactors, generators, absorbers, storage tanks and bleach towers, including the very first installation, are giving excellent service.

The pulp industry can depend on Stebbins experience, research, engineering and construction know-how to meet the requirements of new processes.

SINCE 1884
Specialists in
Design
Installation
and Servicing
of Linings and
Tile Tanks

SEMCO

STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. 1504 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. CASTLE BLDG., MONTREAL, CANADA

to our old customers

Thank you for your confidence in our products.

to our new customers

A hearty handshake and our promise to produce felts which will merit your continued patronage.

to our returning customers

Welcome home! Huyck expanded services are geared to help you.

a very merry christmas

and a prosperous Happy New Year to all our friends

KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

"First in Quality... First in Service"

F. C. HUYCK & SONS, RENSSELAER, N. Y.

CANADIAN NEWS

Bickell Promoted; Mason-Neilan Mgr.

LESLIE K. BICKELL, former chief chemist of Alaska Pine & Cellulose Ltd., at Woodfibre mill, Woodfibre, B.C., has been appointed technical service director, Cellulose Division, Vancouver, B.C., head office.

JOHN O. TRAGARD is new sales manager of Mason-Neilan Regulator Co., Ltd., Canada. He was previously with Foxboro and Hammel-Dahl. His headquarters will be 5415 Paré St., Montreal.

PAUL E. COOPER, president of Crown Zellerbach Canada Ltd., and Elk Falls Co., Vancouver, B.C., retires at the end of this year. Mr. Cooper has been prominent in the industry 30 years in the U.S., United Kingdom and Canada. His first job was resident engineer of International's Piercefield, N.Y., mill and later he was manager at Rumford, Me.

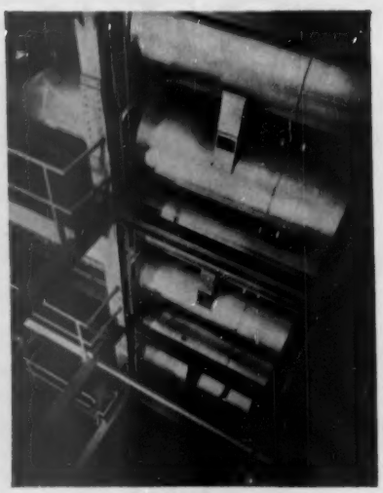
a better product and more of it

with the

CHEMI-PULPER®

Continuous Digester

The Filer City Plant of the
AMERICAN BOX BOARD COMPANY



"Worthless" forests of aspen woods near Filer City, Michigan, are now a valuable source of raw material for American Box Board's Filer City plant which will produce 120,000 tons of .009 paperboard corrugating medium per year now that their $10,000,000 expansion and modernization program is completed.

Aspen, previously considered useless for conventional paper because of its extremely short fibers, is being converted into excellent pulp by CHEMI-PULPER Continuous Digesters at the Filer City plant. These digesters operate on an around-the-clock basis and supply pulp for the papermaking machines.

CHEMI-PULPER Continuous Digesters are operating in many prominent mills producing pulps for products from boards to bleach grades.

Write for Bulletin C3.

Manufactured and Sold in Canada by
THE ALEXANDER FLECK LIMITED, OTTAWA, CANADA.

PANDIA

PANDIA INC.
122 EAST 42nd STREET • NEW YORK 17, N. Y.

ROBERT J. KESWICK has been appointed mill mgr.; **C. VINCENT CALLAGHAN** general supt., and **R. ANTHONY ROBINSON** supt. of kraft and semi-chemical pulp of Bathurst Power & Paper Co., announces **JOHN A. HANNA**, mgr. of operations. **GORDON F. ALLO** has been transferred to Montreal as technical adviser to the sales manager.

ROBERT J. ASKIN, vice pres. of Abitibi Power & Paper, and **M. J. FOLEY** exec. v.p. of Powell River Co. have been elected directors of the Canadian Manufacturers Assn.

GEORGE B. HILLS JR. formerly executive assistant, Powell River Co., will head its new planning division.

JOHN FRISCH, former project engineer at Canadian International Paper, Hawkesbury, Ont., has accepted a position with Defense Construction, a Crown company serving armed services.

RALPH B. BRENNAN, managing director, G. B. Barbour Co. Ltd., Saint John, N.B., was elected a director of Fraser Companies.

F. M. DONEGAN has been elected to the board of KVP Co. Ltd.

HUGH W. SLOAN, vice president of St. Regis Paper Canada Ltd., has been appointed to direct its operations.

AUSTRALIA NOTES

WILLIAM ILLINGWORTH, paper mill superintendent of Australian Paper Mills' Fairfield mill, who left the industry in Scotland 30 years ago for "down under," has been revisiting his homeland and he returned by way of U.S. and Canada.

DR. H. E. DADSWELL, Australian forest authority, planned to leave Sydney, N.S.W., in mid-December with his family to act as Walker Ames professor of forestry at the University of Washington.

Robert B. Wolf Dies

Robert B. Wolf, former pulp division manager, Weyerhaeuser Timber Co. and well known in the industry as an industrialist and engineer, died of a heart attack during dinner at a hotel in Danbury, Conn., Nov. 11.

He was former manager of Burgess Sulphite Fiber Co., Berlin, N.H. and manager of Spanish River Pulp & Paper Co., Ont. He founded Pulp Bleaching Corp. in New York in 1919 and was its president until he went with Weyerhaeuser. Since his retirement, he has been a management consultant for several New York business firms.

Continued on page 30

for GREAT NORTHERN'S

new #5 machine

BY BELOIT IRON WORKS

FIVE CARLOADS

of

"Rubber Rolls with a Reputation"

BY

S-W INC.

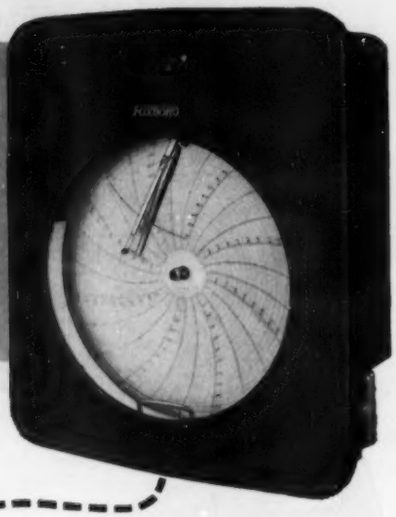
STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN - NEWTON 64, MASS. - GRIFFIN GEORGIA

An unbeatable team for temperature measurement

DYNALOG RECORDERS and DYNATHERM BULBS



You can't beat this Foxboro Dynalog-Dynatherm combination for insuring better temperature measurement on any job between–100° and+600°F. It gives you every advantage of speed, accuracy, long leads, simple installation, economy, and freedom from maintenance. This is why:

The Dynalog Electronic Recorder has an exclusive variable-capacitor measuring system which eliminates slidewires, gears, cables, high speed balancing motors . . . no dead space, no batteries to standardize, no motors to service. Standard full-scale pen speed only 3 seconds. Sustained accuracy ¼ of 1% guaranteed. Available for spans as narrow as 5°F. with full-accuracy calibration.

The Dynatherm Resistance Bulb has unique features including metal-to-metal end-contact which, when installed in a well or socket, gives a speed of response unsurpassed by any other similarly protected temperature-sensitive element. Exceptionally rugged and permanent in calibration.

These are only a few of the important advantages of this better temperature measuring system . . . available also for control of temperatures, or with Multi-Record Dynalog Recorder for up-to-6 records on one chart. Write for illustrated bulletins.

The Foxboro Company,
9912 Neponset Ave.,
Foxboro, Mass., U.S.A.

for any range between -100° and +600°F.

FOXBORO REG U S PAT OFF **INSTRUMENTATION**

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

Are your drives up to par?

Whether you play golf or not... you still need "GOOD DRIVES"

Drives for your mill machinery, that is. Downingtown drive units are "scoring" in many mills because they:

Provide wide ranges of speed and horsepower in an extensive choice of gear ratios.

Are available in a complete selection of types and arrangements for combinations to fit any requirements.

Use anti-friction bearings throughout.

Are available with air, mechanical or electrical clutches.

Adjust to and hold desired draw accurately.

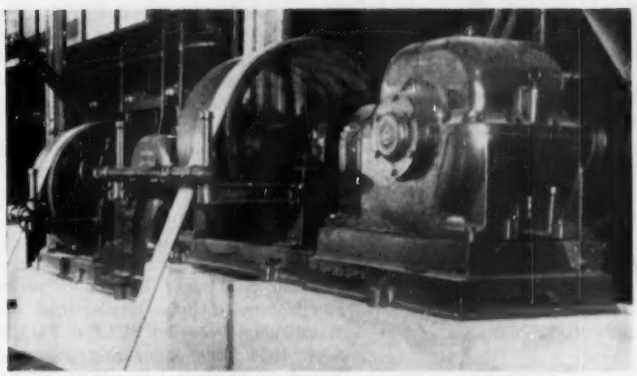
Adjust easily by direct or remote control.

Are "safety" engineered.

Are engineered for long life and thus reduce replacement costs. Maintenance costs are further reduced by extensive use of standardized parts readily available from stock.

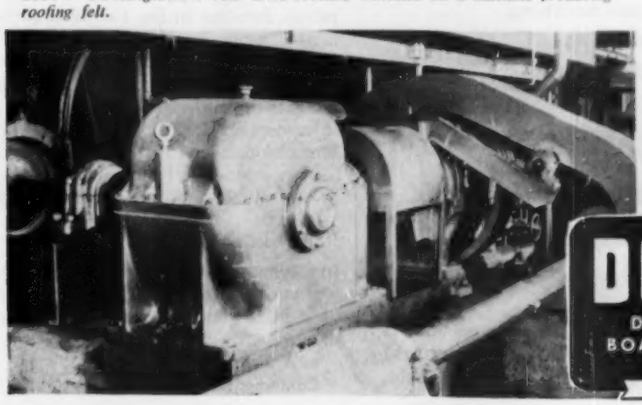
Made in both flat and V-belt types, Downingtown drive units are backed by the engineering "know-how" to adapt them to your special needs.

Your Downingtown Sales engineer can supply you with detailed data. At your request he will help you to plan a step-by-step drive modernization program for your mill.



ABOVE: *Downingtown flat belt drive in operation on a 166" cylinder board machine.*

BELOW: *Downingtown V-belt drive recently installed on a machine producing roofing felt.*



DOWNINGTOWN MANUFACTURING COMPANY
DOWNINGTOWN, PA.

West Coast Representative: John V. Roslund, 244 Pacific Building, Portland 4, Oregon.

Export Engineering Department: United States Machinery Co., Inc., 90 Broad Street, New York 4, New York.

DOWNINGTOWN
DESIGNERS AND BUILDERS OF PAPER BOARD AND FELT MACHINES SINCE 1880
MODERNIZATION IS PROFITABLE

Bill Gibson's Career

William Robert Gibson, who designed and engineered filter plants for many Pacific Coast mills, was 70 when he died recently at his home in Los Gatos, Calif. His widow, Georgia Valentine Gibson, was former manager's secretary at the Rayonier mill, Shelton, Wash. Mrs. Gibson's residence continues at 222 Bella Vista, Los Gatos.

Born in Scotland, Mr. Gibson came to the U.S. in 1927, working with Crown Z and Rayonier mills in Port Angeles, Hoquiam and Shelton, Wash., before joining the late Cap Shibley, for whom the Tappi Shibley award was named, in the Northwest Filter Co., Seattle. After heading this firm for years, Mr. Gibson recently turned over the presidency to his associate, Rodger Sheridan.

IF YOU WANT IT FABRICATED
NWC'S YOUR MAN

Northwest Copper Works is the pioneer fabricator of Stainless Steel for the Paper Industry...SERVICE is a by-word...FOLLOW-THROUGH is a Must...GUARANTEED SATISFACTION means what it says.

Jordan Head Box installed in a Pacific Northwest Pulp and Paper Mill.

Specializing in:

- Stainless Steel Products
- Stainless Steel Tubing
- Stainless Steel Valves
- Stock Valves
- Stainless Steel Fabrication
- Stainless Steel Fittings
- Stainless Steel Pipe
- Copper Smithing
- Lead Linings
- Lead Burning

NORTHWEST COPPER WORKS

1303 N. RIVER STREET
PORTLAND 12, OREGON

PHONE MURDOCK 2191

The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois

"Required Reading"

The copy of your fabulous October issue telling the story of Ketchikan Pulp Company has just arrived on this end of the slow-boat run.

Because the writeup is so well done, and the treatment is so comprehensive, I want to make it required reading for our field offices. Congratulations on an outstanding issue.

Very truly yours,
A. W. Greeley, Regional Forester,
U. S. Forest Service, Juneau, Alaska

New Name for Douglas Fir

It is unfortunate that I did not think to explain to you the reason for using the new scientific name for Douglas-fir, *Pseudotsuga menziesii* (Mirb.) Franco, in my article, "Yield and Increment of Douglas-fir Compared with Loblolly Pine."

The change of the name of Douglas-fir from *taxifolia* to *menziesii* was made by the International Committee on Plant Names, not by the Forest Service. After this action was taken, it was not a question of the Forest Service approving this name, but rather that they felt obliged to use it when the "Check List" of trees of the United States was reprinted in 1953. We, in the Forest Service, are obligated to use this name in our official writing so long as it is listed in the "Check List."

Norman P. Worthington, Forester
Puget Sound Research Center,
U.S. Forest Service.

Ed. note—As a minor "by-product" of the excellent and exclusive article which Mr. Worthington wrote for PULP & PAPER, Sept. 1954 issue, comparing pulpwood growth in South and Far West, we received a few protests to his use of a new scientific name for Douglas Fir. Many private foresters in the Far West prefer the old name, *Pseudotsuga taxifolia*. We thought it only fair to point this out to Mr. Worthington, and give him an opportunity to explain.

Incidentally USFS has reprinted Mr. Worthington's unusual article—based on his experience in both South and Far West.

"First in the Field"

In reading your trade paper in past years, we note PULP & PAPER is always first in its field to describe new equipment of merit.

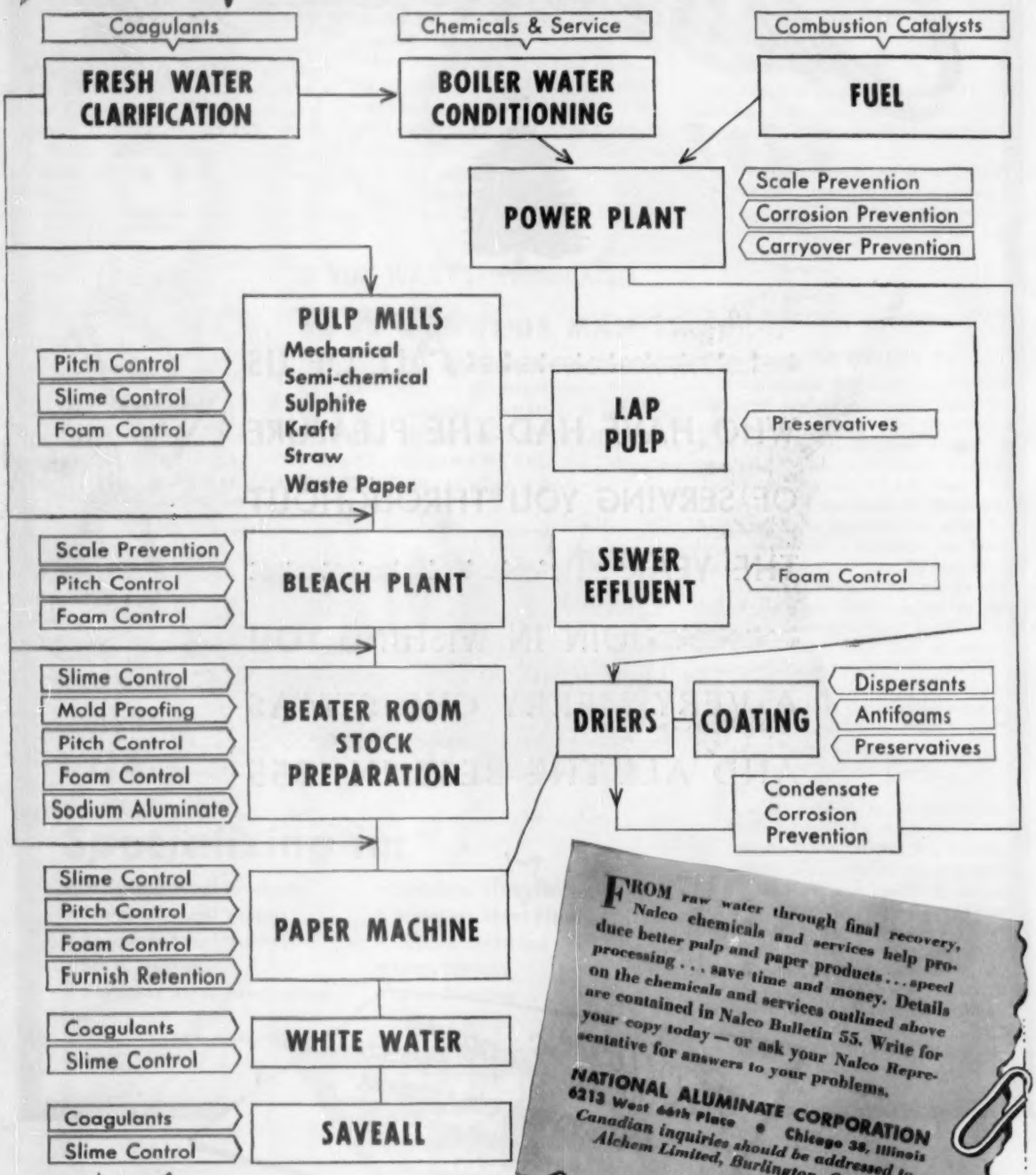
L. A. Duncan, Adv. Mgr.,
Container Stapling Corp., Herrin, Ill.

Christmas 1954

ALL OF US
WHO HAVE HAD THE PLEASURE
OF SERVING YOU THROUGHOUT
THE YEAR . . .
JOIN IN WISHING YOU
A VERY MERRY CHRISTMAS
AND ALL THE BEST IN 1955

The Officers and Employees of the
LOCKPORT FELT COMPANY
NEWFANE, NEW YORK

CHECK of CHART *Nalco*® PRODUCTS and SERVICES for the PAPER INDUSTRY



FROM raw water through final recovery, Nalco chemicals and services help produce better pulp and paper products . . . speed processing . . . save time and money. Details on the chemicals and services outlined above are contained in Nalco Bulletin 55. Write for your copy today — or ask your Nalco Representative for answers to your problems.

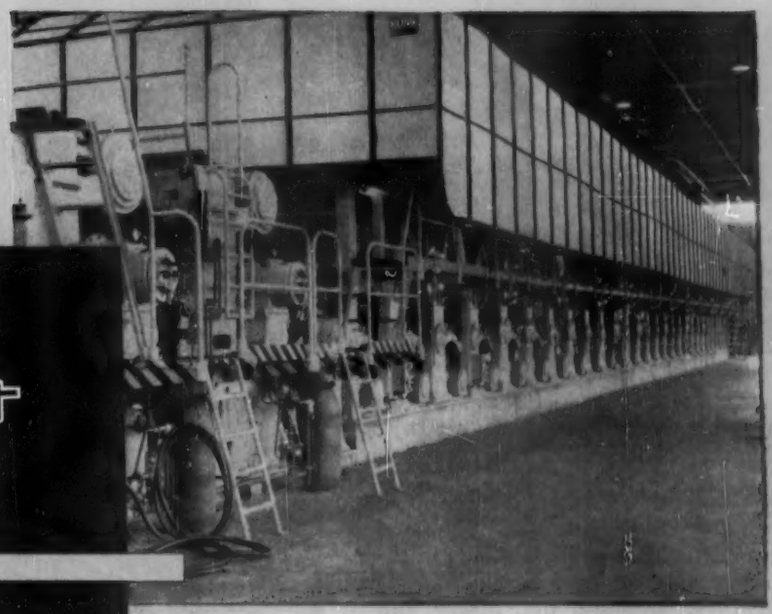
NATIONAL ALUMINATE CORPORATION
6213 West 66th Place • Chicago 38, Illinois
Canadian inquiries should be addressed to Alchem Limited, Burlington, Ontario

THE *Nalco* SYSTEM • Serving the Paper Industry through Practical Applied Science

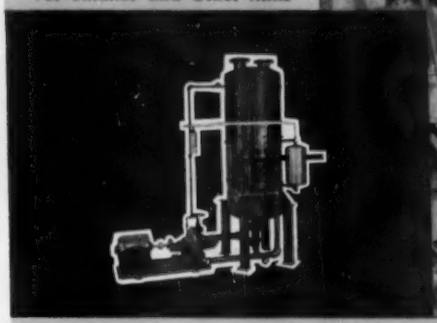
WATER COLOR PAINTING BY L. J. A. NEESE

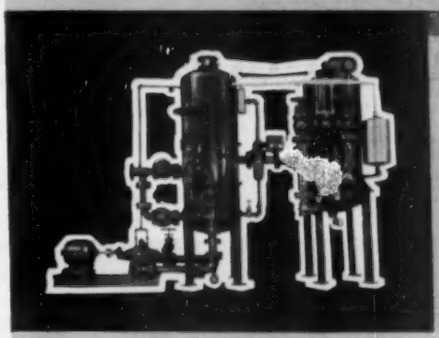
SINCE 1858 the plant of Beloit Iron Works, on the bank of the Rock River at Beloit, Wisconsin, has grown with the paper industry, and now occupies 16 acres of ground and employs over 1700 men and women. Advanced engineering and highest standards of craftsmanship are key factors in designing and building of Beloit high-speed, high-production paper machines.

IS YOUR *DRYER* IN GOOD HEALTH?



For Smaller and Older Mills





For New and Large Mills

Your dryer is in excellent health if you use a Fulton Dryer Drainage System to snap it to attention and make it behave. Fulton systems generally return the following benefits:

- 10% to 30% more drying capacity
- 5% to 20% cut in steam input
- Proper graduation of drying temperatures
- Uniformly dried sheet, regardless of machine speed
- Automatic control of drying under all conditions
- Less broke—far less broke
- Less of shrinkage, cockling, hardening

From the largest and most modern mill clear on down to the smallest and oldest, Fulton systems—close to 1000 of them—are proving their worth.

Every year that a mill operates without a Fulton drainage system on its dryer, it pays for one without having it.

Is your dryer in good health? If not, the installation of a Fulton system rates serious consideration.

ROSS MIDWEST FULTON CORPORATION

DAYTON, OHIO

A SUBSIDIARY OF J. O. ROSS ENGINEERING CORPORATION

From one source . . . any instrumentation you need

When it comes to measurement and control, every industrial process is different. Each demands its own combination of accuracy, economy, instrument ranges, and all the numerous other characteristics that are peculiar to the individual application.

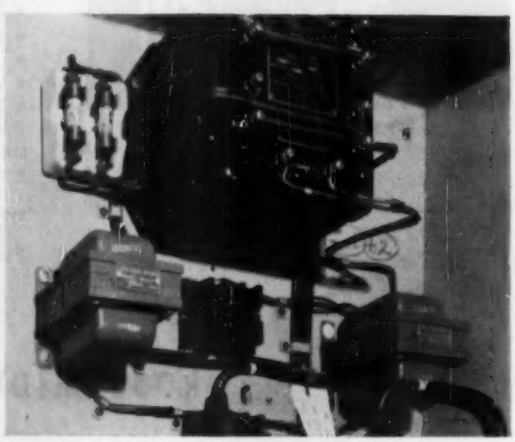
No single instrument and its accessories could possibly fit every process. So Honeywell makes a broad variety of measuring and controlling equipment that spreads across a tremendous range of applications.

The advantages are two-fold. First, you can get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And second, you are assured that the equipment selected for your process is recommended without bias . . . neither over-sells nor under-equips . . . needs no stretching, squeezing or compromising to fit it to its assignment.

This versatile family includes *ElectroniK* indicators, recorders and controllers in circular and strip chart models, applicable to temperature, pressure, pH, power and dozens of other variables; square root flow meters for control applications; evenly graduated flow meters for cost accounting; thermometers, pressure gauges and liquid level meters; *Pyr-O-Vane* millivoltmeter controllers. Especially useful for graphic panels are the *Tel-O-Set* miniature indicators, recorders and controllers. Electric and pneumatic control systems range from the simplest to the most complex, including automatic program controls and complete systems developed for particular processes.

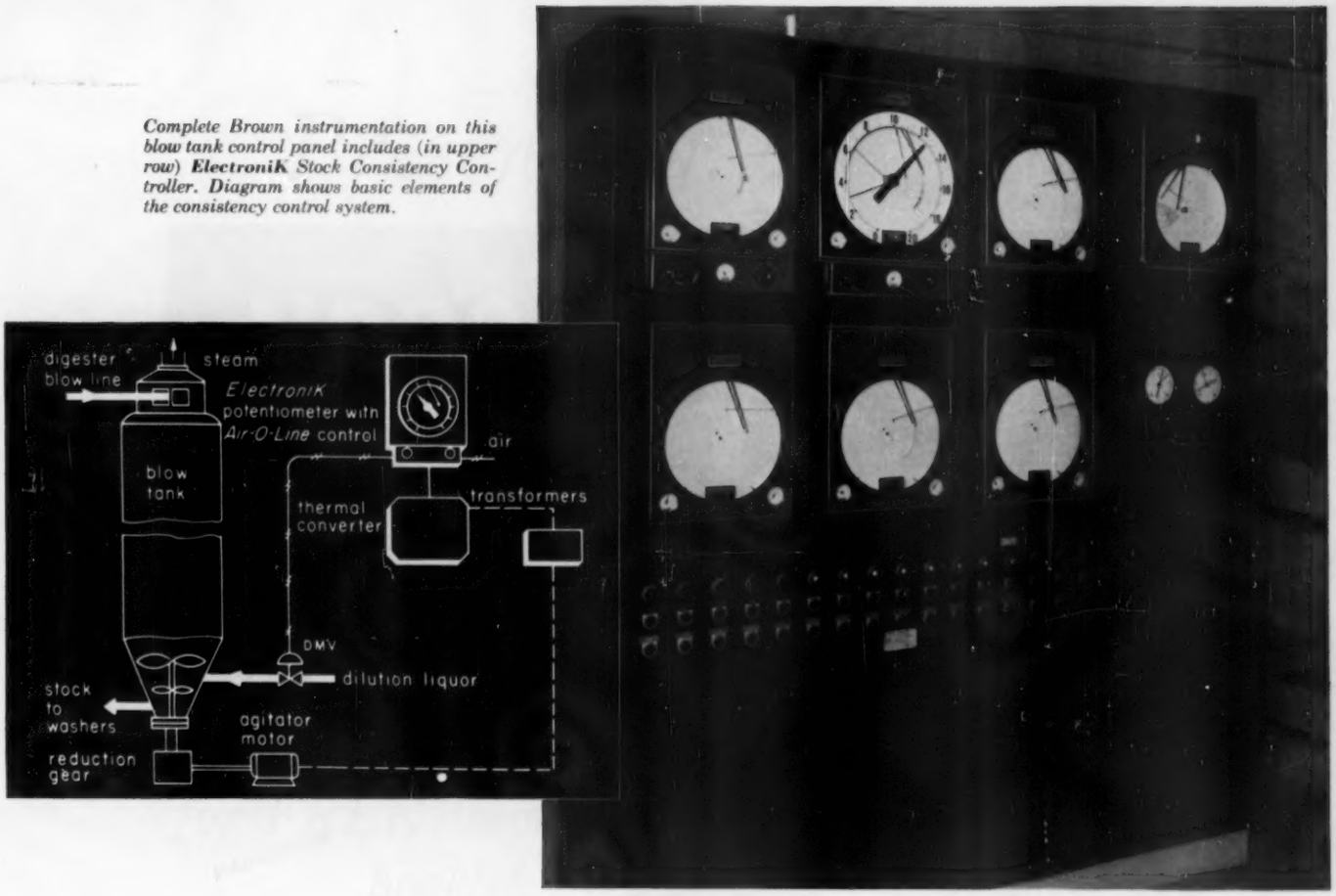
Working with these instruments is a full choice of primary elements . . . thermocouples, *Radiamatic* radiation elements, pressure-type and electrical resistance thermal systems, flow meter bodies, pH cells and many others. For final control elements, you can choose from a wide range of electric motorized and diaphragm operated valves. To complete the picture, there are more than 7000 non-indicating devices for controlling temperature, pressure, vacuum, liquid level and humidity . . . an unmatched variety of instrumentation made by the world's largest manufacturer of control equipment.

Automatic way to control



Agitator motor load is detected by thermal converters, connected through transformers to the motor input circuit. Similar instrumentation is also being applied to consistency measurement in high density stock storage tanks and bleach towers.

Complete Brown instrumentation on this blow tank control panel includes (in upper row) ***ElectroniK*** *Stock Consistency Controller. Diagram shows basic elements of the consistency control system.*



consistency of paper stock

BY APPLYING *ElectroniK* instrumentation to automatic measurement and control of stock consistency, paper makers are adding an important link in the chain of modern process instrumentation. When used as part of the blow tank control, this equipment continuously measures and records the consistency of the stock in the tank. And by regulating the flow of black liquor for dilution, it automatically maintains consistency at optimum values.

The instrument measures stock consistency in terms of the electrical power required to drive the agitator motor. When consistency rises, the motor draws more power . . . and vice versa. By using a thermal converter in conjunction with suitable current and voltage transformers, motor power input is changed to a d-c millivoltage signal that the *ElectroniK* instrument can readily measure.

The *ElectroniK* instrument responds quickly and accurately to changes in consistency. By controlling automatically, it releases operators for other responsibilities . . . helps to eliminate fluctuations in stock flow to washers . . . protects production against failures of agitator motors, or washer pumps.

ElectroniK control of stock consistency is designed as an integral part of Honeywell control for modern paper processing. Your nearby Honeywell sales engineer will be glad to discuss your specific application . . . and he's as near as your phone.

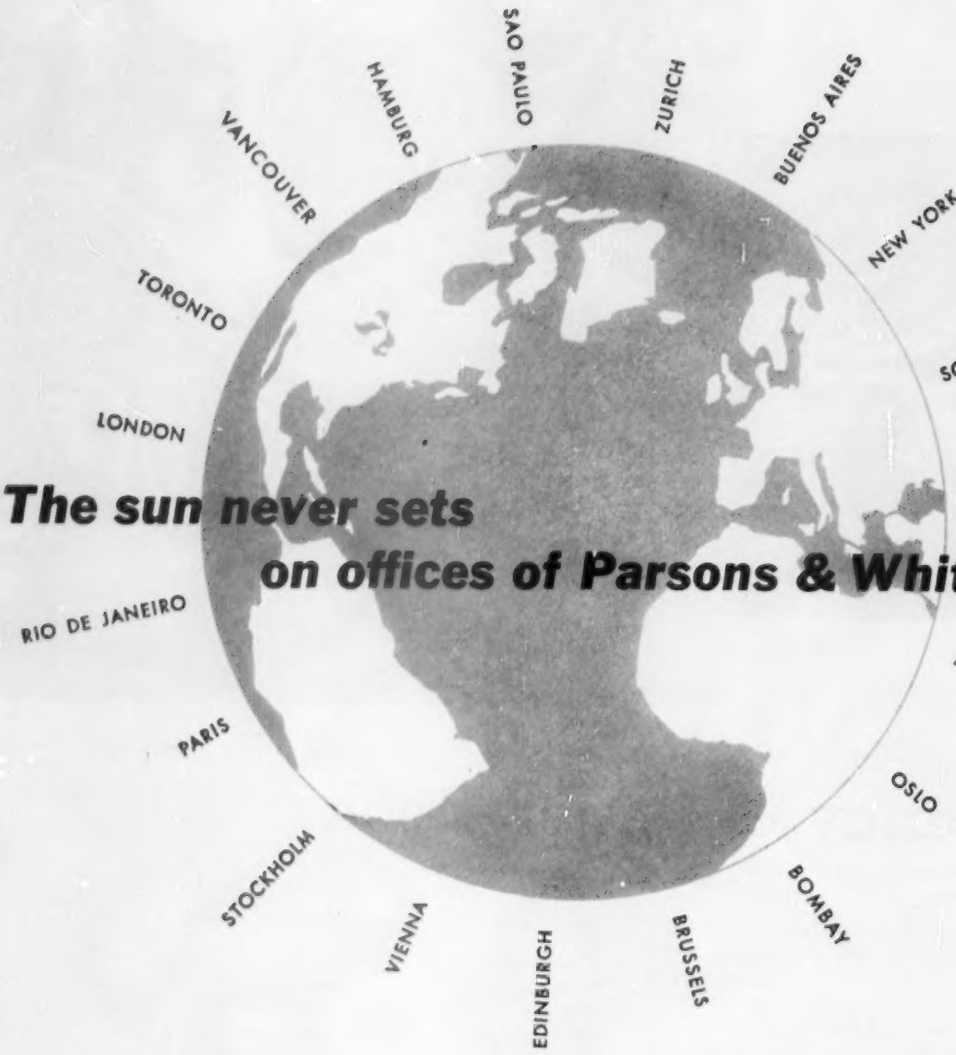
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Data Sheet No. 29.0-4, "Consistency Control for Paper Mills."**

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls



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for pulp
paper
paper-making machinery
graphic machinery

GROWING WITH THE PAPER

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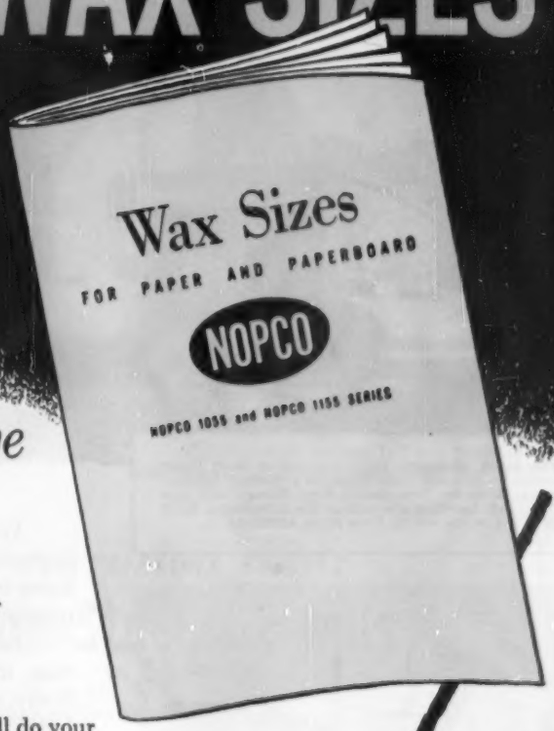

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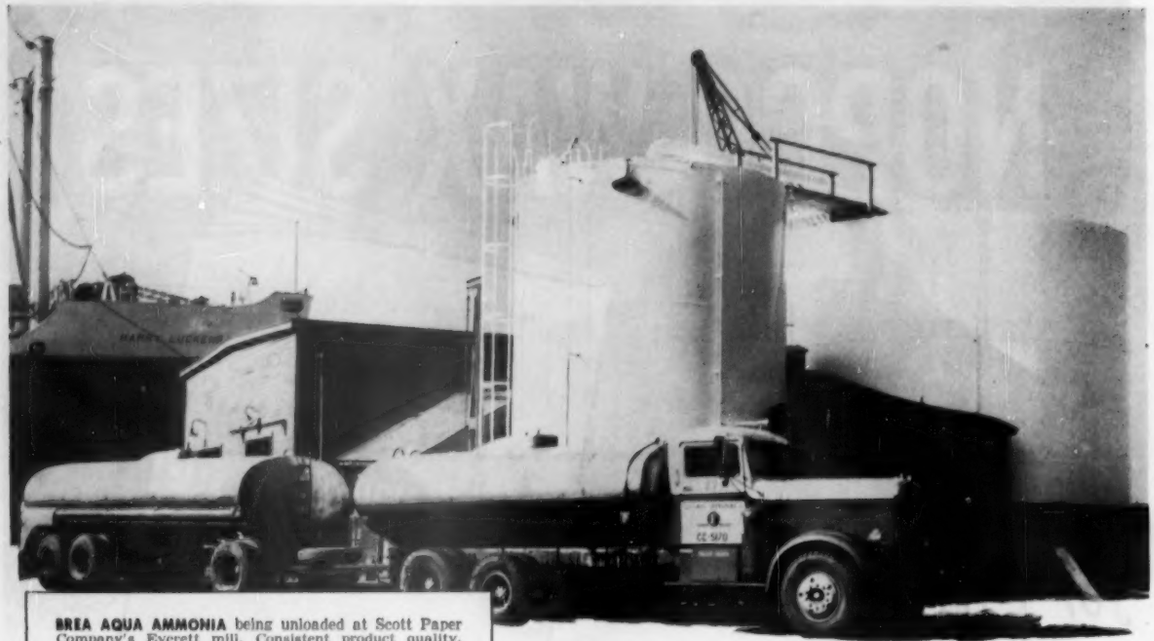

BREA AQUA AMMONIA being unloaded at Scott Paper Company's Everett mill. Consistent product quality, prompt deliveries from nearby Brea storage, and ease of in-plant handling are among the advantages Scott has found in the use of Brea Aqua Ammonia.

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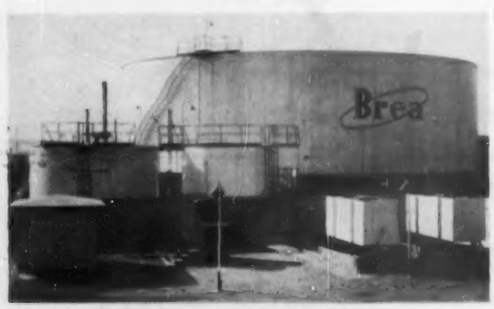

13 BREA STORAGE AND DISTRIBUTION TERMINALS with a total capacity of 21,000,000 gallons bring Brea Aqua within easy delivery range of Pacific Coast industrial areas.

With the continued rapid increase in ammonia-base sulfite pulping, Northwest mills are becoming more conscious of the advantages of receiving ammonia in aqua form.

Brea "Aqua" is a 24.5 per cent ammonia solution, available by direct Union Oil tankship delivery, or by barge or tank truck from Brea's distribution terminals at Edmonds, Washington, and Willbridge (Portland), Oregon.

Use of Brea Aqua avoids the expense of converting anhydrous ammonia at the mill, and avoids the necessity of tying up rail spurs.

While initial interest in ammonia-base pulping was directed at spent-liquor pollution abatement, it has been found that ammonia-base has many other advantages. Among these are a shorter digestion time, increased pulp yields and improved quality, simplified lignin recovery or extraction, and reduced bleach demand to obtain a given brightness.

When considering ammonia-base sulfite pulping—LOOK TO BREA.

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Interior of Lukens Inconel-Clad steel digester, manufactured for Crossett Paper Mills by Wyatt Metal and Boiler Works, P.O. Box 3052, Houston 1, Texas. Since its installation some 3½ years ago, annual corrosion is nil.

Digester corrosion rate:

Inconel, nil—Carbon Steel, 62 mils

Consider the experience of Crossett Paper Mills, Crossett, Ark.

They have used various forms of carbon steel and different alloys including Lukens Inconel-Clad for digesters.

Eight mild steel digesters show an average corrosion rate of 62 mils per year. The Inconel-Clad digester shows no measurable corrosion.

The evidence is clear, not only in the Crossett installation but in several other well known mills.

Judging by mill experience in general, Inconel shows greatly improved resistance to alkaline pulp digester corrosion as compared to other materials of construction.

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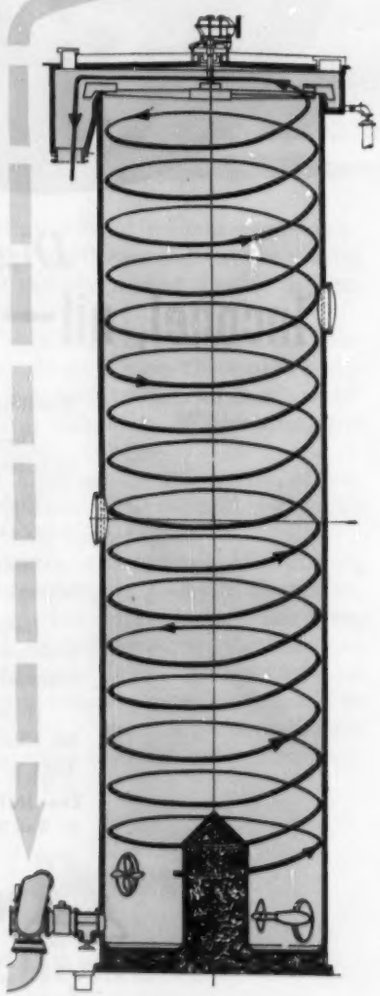

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C3-a

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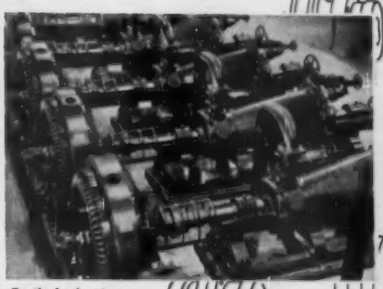
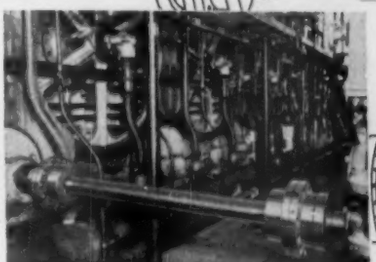
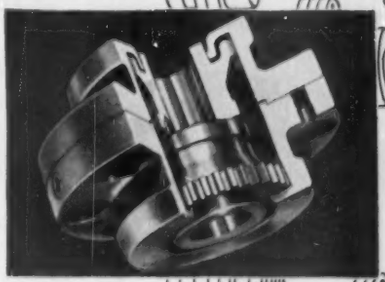


Fast's Jordan-type Coupling in a leading paper mill.



Fast's floating shaft Coupling paper mill installation.



Cutaway view of typical Fast's Coupling. Note unique design.

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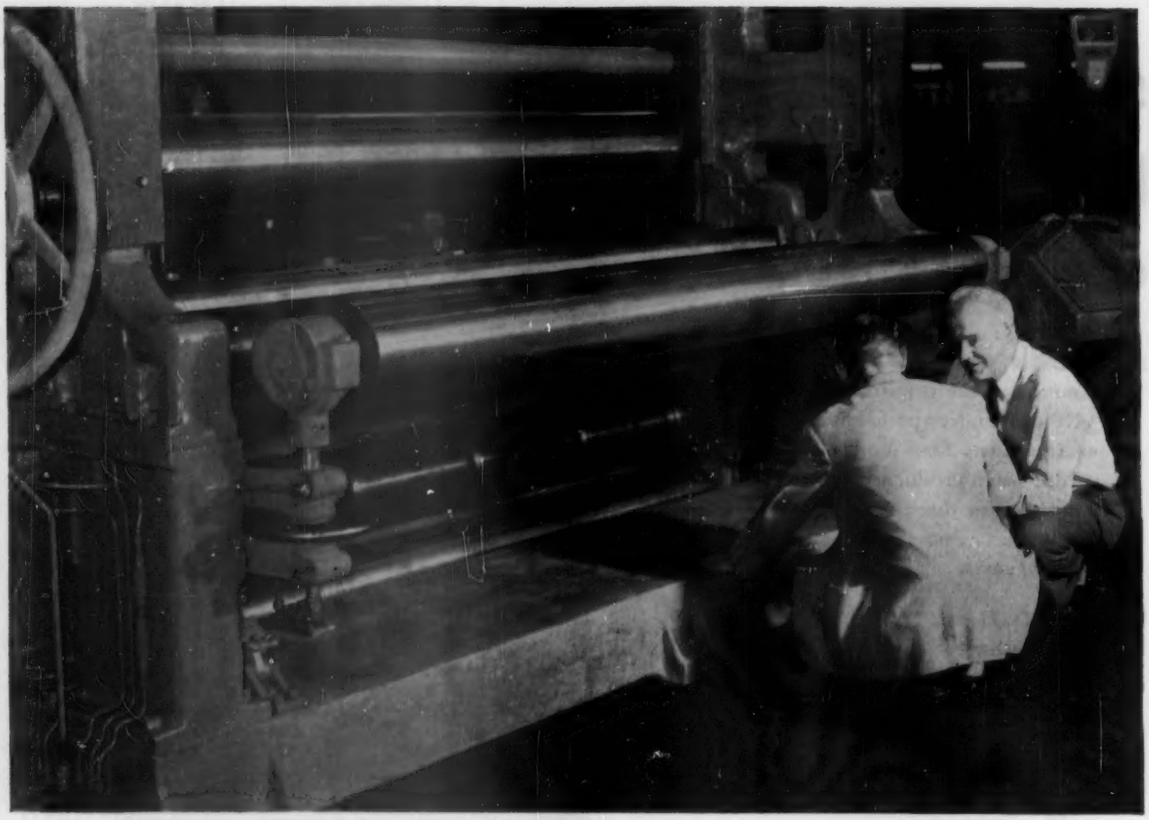

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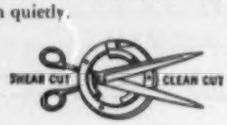
V-Belt Drives to the Rider Roll and Winding Drums. Far more efficient than flat belts for a given cross-section size. Belts need no lubrication, give smooth drive, run quietly.

The massive bedplate and side frames on this Langston Model DA are important reasons why Langston Slitters & Winders work so well and last so long. Every Langston machine has a bedplate and side frames which, like this one, are more than husky enough to hold the machine steady under full load.

This extra sturdiness makes Langston machines easier to align, and insures that they will remain steady through a long life of hard use. With the weights these machines carry, it doesn't pay to risk unsteadiness—even at *moderate* speeds. If you plan to operate your winders at *high* speeds, you need all the sturdiness Langston construction gives you.

Clean-cutting Langston Slitters & Winders use shear-cut slitters throughout the line—standard equipment without special order or extra cost. V-belt drives to the rider roll and between winding drums with variable pitch sheave permit easy adjustment of speed to suit grade of paper, or roll density required.

Langston Slitters & Winders are available in four standard models, in sizes from 40 to 196 inches and speeds to meet your specifications. These machines are now being produced at an accelerated rate, but the demand is exceptional. Prevent disappointment by planning ahead and placing your order early. For full information, write Samuel M. Langston Co., Camden 4, N.J.



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Only SOLVAY offers you a Technical Service with separate sections for textile, paper, water, sewage and other industries that use chlorine. SOLVAY'S staff of engineers, chemists and technicians are available AT NO COST OR OBLIGATION!

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Photo courtesy of the Container Corporation of America, Cincinnati Plant. Ohio Knives are used exclusively in many of this Company's plants throughout the country.

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caustic soda—

which strength should you buy?

Here are the facts to help you decide which saves you more—50% or 73%

Can you save by switching from 50 to 73% liquid caustic? Your answer will depend on:

1. Your caustic soda freight rate.
2. Your facilities for handling caustic.
3. The amount of caustic you use.

Advantages of 73% liquid

1. With 73%, there is a substantial saving in freight charges. 63% less water is shipped per unit weight of dry caustic soda.
2. You will place fewer orders. This cuts down on your billing work.

Disadvantages of 73% liquid

1. It is priced $2.00 more per ton (dry basis) than 50% because of higher manufacturing costs.
2. If you store it as 73% liquid, you will need heated, nickel-clad steel storage tanks.
3. If you dilute 73% to 50% while unloading, you will need a cooler and other equipment. This represents a considerable investment which can be reduced if you have suitable equipment already on hand.

Use this table to see if you can save with 73%

Use the table at right to find your approximate saving on freight charges with 73% liquid caustic. The table balances two cost factors . . . lower freight charges and the higher initial price of 73% liquid caustic.

To estimate your yearly savings, multiply the figure in the right-hand column which applies to you by your annual consumption in tons (dry basis).

From these savings you will have to deduct the cost of equipment for diluting to 50% while unloading.

Freight rate per hundred weight in cents (including taxes)	*Net savings per ton (dry basis) in dollars*
5	minus 1.40
10	minus .80
15	minus .10
16	0
20	.60
25	1.20
30	1.80
35	2.40
40	3.00
45	3.70

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You gain much by choosing the *right* strength for your conditions. In coming to a decision, why not give yourself the advantage of unbiased expert technical help? A call to your nearest Hooker sales office puts at your disposal, without obligation, the experience gained in 50 years of supplying caustic soda to industry.

Your Hooker technical service man can show you what equipment you need for converting, and help you figure your exact savings. Why not phone or write him today at the nearest Hooker office?

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"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we will be glad to send you. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write for a copy.

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Industries whose water requirements are exceptionally large will find vital information in a new series of water studies now in preparation by the Frisco Railway. The studies cover industrial sites 50 to 3,000 acres in size, and water capacities from *10 million gallons daily* to as high as *37 billion gallons daily*. Industrial manufacturers planning a new plant or seeking to relocate near abundant water sources will find these studies invaluable.

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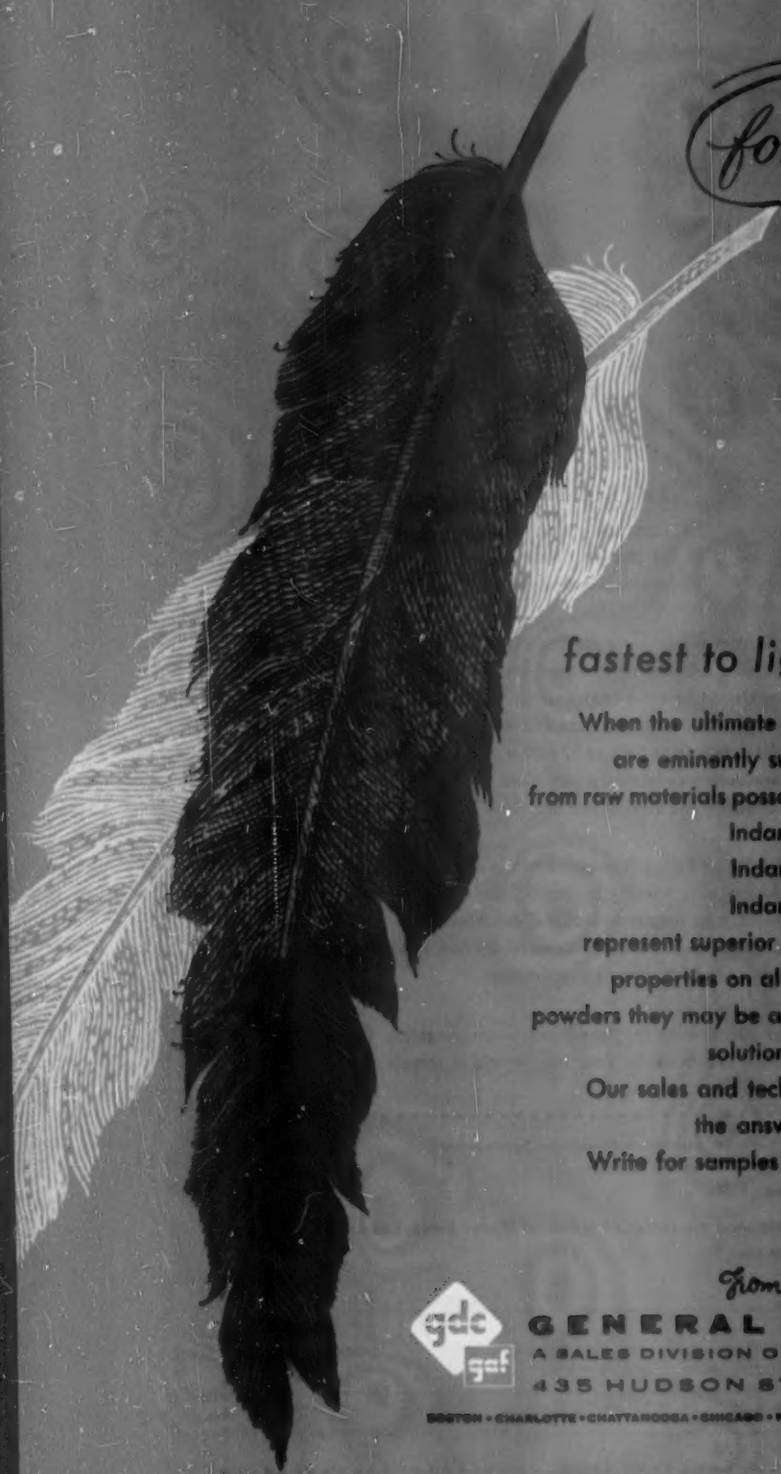

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Indanthrene Paper Blue GWP Pdr.
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represent superior vat pigments which exhibit excellent fastness properties on all types of bleached pulps. Being water dispersible powders they may be added dry to the beater or used in stock solutions without danger of causing color specks.

Our sales and technical service representatives can provide the answers to all your paper tinting problems promptly.

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Western Kraft Orders Machine

Major equipment has been ordered for the new Western Kraft Corp. 100-ton-per-day container board mill near Albany, Ore., using entirely lumber and plywood waste.

Key personnel have been appointed by Ira C. Keller, former executive vice president of Conlives in Portland, Ore.

The machine, to be designed and built by Bagley-Sewall division of Black-Clawson Co., will have 1200 fpm maximum speed, 164-in. Fourdrinier wire, 148-in. trim, and a 2-section dryer; a Babcock & Wilcox recovery unit, with venturi evaporator and cyclone separator, to be erected by C. C. Moore & Co. Sandwell & Co., Ltd. are consulting engineers.

Main building will be a 2-story concrete structure covering 20,000 sq. ft., machine on second floor.

O. W. Hisey, vice president of Sandy Hill Iron & Brass Works, will be vice president and production manager for Western Kraft. Hugo Trygg, formerly pulp mill supt. for a large West Coast producer, has been named plant superintendent.

Directors of Western Kraft, besides Pres. Keller, include Robert V. Hansberger, exec. v.p., William Swindells and C. H. Wheeler, v.p.'s, W. W. Clark, board chairman, and Maurice Clark and Robert C. Kirkwood.

Mr. Keller says the plant "has a perpetual wood supply," from chip plants of Willamette Valley Lumber Co. at Dallas and Corvallis, Willamette National Lumber Co., Foster, Santiam Lumber Co. at Sweet Home and Lebanon, and Western Veneer Co., Lebanon, which he said already operate on a sustained yield plant.

Ira C. Keller & Co. has been appointed exclusive sales agent.

W. O. HISEY comes from South America to become Vice Pres. and Prod. Mgr. for new Western Kraft mill, Albany Ore.

Expansion is Coming—1955-7

PULP & PAPER Editors report plans for at least 26 new paper machines or pulp mills, mostly South and West

● A summary of many well-substantiated reports or confirmed plans of expansion for this North American industry shows that the 1955 to 1957 period is going to see further expansion matching almost any two-year period in the past. Companies plan just about as big an outlay for capital expenditure. Two company presidents told PULP & PAPER they are looking all over the U.S.A. for new mill sites.

Most sensational news of all is that at six big mill operations, in the South and North, there are definite plans for adding two paper machines in each case in the next couple of years. For two of these companies, it is possible that wood supply and pollution problems may force setting up the new two-machine operation at some new site.

Typical of the times is the remark of the president of one successful well-known paper firm: "We need another pulp mill and four more machines."

Keeping Dame Rumor out of this, and not counting the East Texas mill, Rome Kraft, the first of two Great Northern machines, Howard Paper's new machine and other just recently starting up, there are no less than 26 new paper or board machines or market pulp dryers being built or projected for the next year or two. That's not counting rebuild jobs, either, although many of these will step up production.

42 NEW MACHINES—If you are willing to lend an ear to Dame Rumor (she usually boasts about the same batting average as a good No. 3 or 4 hitter), then there are 42 new machines "in the works." Somewhere between 26 and 42 probably will ultimately be the accurate figure.

Besides these, five new gypsum board mills will be built in 1955.

In the South, just about half of 14 reported new machine projects can be classified as "sure bets." Typical of Southern operations, these will be big machines.

In the Far West, from California to Alaska, there are 16 new projects discussed, mostly entire new mills and big ones, too. Only the three in Alaska, and one or two others, must be classified as still "uncertain."

In the Middle West and Northeast —in both U.S. and Canada—there are 12 new machines discussed or ordered. In many cases, these will be small.

Marathon has engaged Chas. T. Main Inc. to plan a new pulp and paper mill; location could be anywhere in U.S. at any time. One Alabama site has been rejected.

In many cases, entire new mills are to be built at costs from $15,000,000 to $30,000,000 or more. Even for a small machine and auxiliaries, investment is sure to be a few millions.

Coupled with this demonstration of continued vitality of this industry, American capital—including pulp and paper capital—also is known to be looking for suitable investment abroad.

With so many projects under way, only a brief run-down can be presented. Here are the facts, gathered by PULP & PAPER editors in every region of the continent:

THE SOUTH—At least three big mergers are discussed in this area, to better integrate and vitalize operations, probably tripping the trigger for more expansion.

Bowaters Southern Paper Corp., Calhoun, Tenn.—announced they contemplate doubling this 2-machine plus pulp-for-shipment mill.

Dierks Forests, Inc., Hugo, Okla. is planning a 60,000 tons yearly newsprint mill at Hugo, 150 mi. n.e. of Dallas. Half of output already sold and Southern newspapers endorsed project. Dierks owns 1,700,000 acres of forests here. Dr. Chas. L. Carpenter reported making technical and engineering plans.

Scott Paper Co., Mobile, Ala.—indicated plans to substantially expand newly acquired Hollingsworth & Whitney operations, to make Scott products.

Hudson Pulp & Paper, Palatka, Fla.—plans 80-ton Fourdrinier tissue machine and $15,000,000 expansion, with J. E. Sirrine Co. as engineers.

St. Mary's Kraft Co.—ordered new Beloit Fourdrinier machine to be installed within year, following new C10$_2$ bleach plant startup.

Southland Paper Mills, Lufkin, Tex.—new Pusey & Jones newsprint machine to start up in 1956.

Crossett Paper Mills, Crossett, Ark.—neutral sulfite semi-chem pulp plant and

Continued on page 118

DELEGATES HEAR AN OFFER FROM APPA
Here are Buenos Aires delegates intently listening when Ted Tinker said American Paper & Pulp Assn. would gladly hold a joint meeting with Latin Americans. Second man from left is ARNE SUNDELIN, of FAO, Rome, Italy.

AL HALL SAYS "USE THE WHOLE TREE"
The man with pipe and tobacco pouch, DR. J. A. HALL, Director of U. S. Forest Products Lab., Madison, Wis., is telling another Buenos Aires delegate that Latin America should set up diversified forest industries.

Discussions Got Hot in Buenos Aires

Northern woodpulps and machinery needed in expansion; conflicting views on how to raise money

• Direct from Argentina is this report with pictures—PULP & PAPER's own review of highlights of the recent Latin American Meeting of Experts on the Pulp and Paper Industry in Buenos Aires:

Enthusiastic discussions, livened by some really sharp differences of opinion, marked the two weeks of sessions, ending Nov. 2, sponsored by United Nations organizations. There were 89 delegates registered (the UN invited over 100). From North America there were 15; nine came from Europe.

Sugar cane bagasse and other agricultural residues came in for exhaustive discussion, as did hardwoods, and even softwoods, as potential raw materials for Latin American pulp and paper mills. Everyone was agreed that the demand for pulp and paper will increase rapidly among 160,000 Latin Americans. But there were many differences of opinion on how best to meet this demand. A mill builder's estimate that consumption of paper would double in ten years was frequently mentioned.

North American market bleached and high quality woodpulps would be required in ever greater amounts than today, if new mills follow the example of virtually all the big successful mills now operating in Latin America. For even where they make some of their own pulp from wood or bagasse, these mills require mixing northern pulps for newsprint and high quality papers.

WHERE TO RAISE THE MONEY?—A most unusual session was one in which possible methods of financing the new mills were pin-pointed, and many methods were discussed. A number of European and Latin American bankers and industry promoters were participants.

United Nations and other delegates suggested International Bank or Export-Import Bank loans might be obtained. Instead, Stacy May, economist for the Rockefeller Foundation, and Ted Tinker, American Paper & Pulp Assn. executive secretary, urged that local and foreign private interests ought to be given first opportunity to invest in the enterprises.

The APPA, through Mr. Tinker, offered to sponsor a joint meeting with Latin American leaders "to develop a mutually acceptable program for assisting Latin American countries to meet their requirements for pulp and paper at reasonable cost."

"It is inconceivable to me that there would be grounds for disagreement between the U.S. industry and Latin American nations," he said.

The possibility of North American investment, as in the case of West Virginia Pulp & Paper, which recently bought and is rebuilding a Brazil mill, and also Container Corp. of America, W. R. Grace & Co., etc., was of considerable interest to the Latin American delegates.

EUROPE EYES LATIN AMERICA—It was quite obvious in discussions that European bankers and promoters are working on big plans for Latin America. The Argentines, Brazilians, Peruvians and others present (about 35 delegates came from Latin American paper companies or groups planning mills) were especially interested in APPA offer to exchange technical and economic information between them and U.S. paper companies.

Mr. Tinker pointed out that "enormous quantities" of U.S. capital are invested in Canada's No. 1 industry—pulp and paper—and that there has been free exchange of information between Canada and U.S.A., and suggested that similar steps could be taken between private enterprise of U.S. and Latin America.

DELEGATES AT BUENOS AIRES TALK . . . AND LISTEN

(Left) DR. J. A. ATCHISON, Parsons & Whittemore, beat the drums for bagasse in a big way. (Center) G. H. Chidester (at left), head of Madison Lab Pulp and Paper Division, soon after this was on his feet talking about new cold soda pulping process and semi-chemical pulping. (Right) Interested listeners were (l to r) RAMON REMOLINCI, Development Chairman of Banco de Fomento, Agropecuario del Peru; STACEY MAY, Chairman on Financing, Rockefeller Foundation; JACQUE MICHON, Director of Batineyret, Paris; extreme right background, R. B. JEFFREYS, Tech. Director, Australian Paper Mfrs.

Some technical delegates said the financial discussions were very enlightening. In the end, it appeared that the outlook for North American private investment, North American woodpulp sales and North American machinery sales took a sturdy stride forward at this meeting, although that may not have been reckoned upon in the advance UN planning.

(FOR THE MOST COMPLETE PUBLISHED REPORT ON NEW AND CONTEMPLATED PULP AND PAPER PROJECTS IN LATIN AMERICA—COUNTRY BY COUNTRY—SEE PULP & PAPER'S WORLD REVIEW NUMBER, 1954 issue, page 180 to 186 inclusive.)

Following this article are comments on the conference sent direct to PULP & PAPER by Dr. Joseph A. Atchison, vice pres., Pulp & Paper Project Division, Parsons & Whittemore, New York, who chairmanned the sugar bagasse section. He told delegates "the opportune time has arrived for more use of bagasse." He said it has proved successful in 15 countries where it is used. The bagasse session was scheduled for one day, but stirred up so much interest, it was extended a half day. Much data brought out will be useful in the future.

The bagasse proponents foresee it as a future major raw material for pulp. Even this extreme view can be conciliated, perhaps, with the significant point made at Buenos Aires that for many grades of quality papers, bagasse will have to be mixed with 50% to 75% longfibered northern quality market woodpulps.

Mr. Tinker, on his return to New York, said there are some obstacles to growth of the industry in Latin America—"extreme nationalism," shortages of fuels and other raw materials (bagasse is now required for fuel in some areas), and he predicted expanded business for U.S.A. in order to help Latin Americans fulfill their needs.

GRACE MILL SETS EXAMPLE—Shining example of how this problem in Latin America may be solved is offered by the pulp and paper operations of W. R. Grace & Co. in Peru, whose success is evidenced by the fact that this company now is substantially increasing the output of that mill. It makes pulp out of bagasse residue of its big sugar plantations at Paramonga, but it also purchases considerable high quality market pulp from Northern Hemisphere countries to mix in a furnish capable of making good printing papers, newsprint, etc. Incidentally, Grace had two New York executives and an engineer from Peru attending the Buenos Aires session.

North American producers of high quality pulps for export are confident that the building of more mills in Latin American countries will require more imported pulps, if the development of the Latin American industry is to be done most economically, most rapidly and with highest quality products.

Parsons & Whittemore Co., presently building a new mill in Brazil with cooperation of Black-Clawson Cos. and other American suppliers, was represented at Buenos Aires by its president, a vice president and its Brazil manager.

A Sandy Hill Iron & Brass Works v.p., whose company equipped the Grace mill and holds license to that process; two Rust Engineering Co. representatives, a Vancouver, B.C. mill builder and engineer, and U.S. Forest Service researchers were among delegates (see list at end of this article).

Karl F. Landegger, president of Parsons & Whittemore, pulp and paper exporters and mill developers and builders throughout the world, predicted pulp and paper production facilities in Latin America would be doubled in 10 years. He based this on present rate increases in consumption, he said.

Substantial parts of machinery expenses can be provided on medium term credits, said Mr. Landegger, and he asserted that paper mills can be rapidly paid for "exchangewise" and estimated 18 months' production would do the trick. An investment of $260,000,000 would build 20 integrated mills, representing 18 months' cost of paper and pulp imports.

In his experience, Mr. Landegger asserted every modern Latin American mill has been a success.

COST FIGURES FOR MILL—P. R. (Dick) Sandwell, whose Canadian firm, Sandwell & Co., is building mills on three continents currently, declared that newsprint can be produced economically in Latin America in mills of more modest size than are required in the Northern Hemisphere (he cited a 2-machine 300 ton mill as practical). This is true, if new techniques and designs are used, he said. He emphasized that mills of less than 300 tons per day, sized to match raw materials or markets, require either some special local advantage or integration with other plants in order to be economic.

"However, more liberal paper quality requirements and new processes well suited to Latin American raw materials suggest the possibility of new mill designs, equipment better suited to small capacities and a balance of heat and power, the combination of which may well overcome disabilities of cost patterns in conventional newsprint mills."

Advantages Latin American mills may have, he said, are higher selling prices, lower taxes, less costly processes for pulping deciduous woods, thereby reducing fuel and power costs (which are high), and opportunities for radical new mill design. But pulpwood costs generally would be no lower than in North America, fuel and

Item and Unit		Cost per Unit	Cost Per Ton of Newsprint
Pulpwood	Cu. meter	$7.50	$25.00
Materials-supplies	—	—	15.00
Electric power	KWH	$0.0125	15.00
Fuel	Million Kg.Cal.	$5.30	15.00
Total variable direct costs			$70.00

A summary of total costs of his hypothetical newsprint mill are:

Daily Newsprint Tons per Day	Capital Charges per Ton	Manufacturing Costs Variable Direct per Ton	Manufacturing Costs Relatively Fixed per Ton	Total per Ton
100	$71	$70	$25	$166
200	$56	$70	$22	$148
300	$49	$70	$20	$139½
400	$44	$70	$19	$133
500	$41	$70	$18	$129

power are scarce or high cost, labor would be cheaper but less productive and slower, and low cost of European equipment, if used, would be offset by transportation cost. Housing, roads, etc., would be required.

Mr. Sandwell's hypothetical Latin American mill would have variable direct manufacturing costs shown above.

Dr. J. A. Hall, director of the U.S. Forest products lab at Madison, Wis., urged use of forest resources for many products, sustaining diversified industries. G. H. Chidester, chief of the Madison lab's Pulp and Paper Division, gave results of Madison tests made on 109 Latin American wood species. He described the Madison-developed cold soda process for pulping hardwoods. He said spruce and softwoods are best for newsprint, but the cold soda process overcomes low strength disadvantages of conventional hardwood pulping.

Direct from Argentina—What Atchison Says

By Dr. Joseph E. Atchison

Vice Pres., Parsons & Whittemore, Inc.

(Special to PULP & PAPER from Buenos Aires)

● I was tremendously impressed with the great effort which went into preparation for the Buenos Aires meeting and with the extremely high caliber of many papers presented. Preparations for this meeting were carried on almost two years and this careful planning resulted in one of the most interesting meetings of this type I ever attended.

To my knowledge it is the first time that technical, economic and financial experts from both government and industry and from many countries have met together to discuss mutual problems connected with development of pulp and paper in a particular area. The two-week duration allowed a sufficient time for complete discussions and exchange of views.

The great number of papers were segregated into 9 categories.

1.) Opening meeting with top officials sponsoring organizations, outlining the objectives;
2.) Pulp and paper consumption, production and trade in Latin America;
3.) Economic aspects of manufacture from Latin American tropical and sub-tropical hardwoods;
4.) Aspects of pulp and paper manufacture based on other Latin American forest resources;
5.) Economics of pulp and paper manufacture from sugar cane bagasse;
6.) Papers on selected technical matters;
7.) Review of development prospects for pulp and paper industries in selected countries;
8.) Financing of pulp and paper developments;
9.) The newsprint problem.

SOME HEATED DISCUSSIONS—Papers were distributed to all delegates before the meetings and during the meetings each paper was merely reviewed by the writer and a brief summary given of contents. Then, discussions were opened and this resulted in some extremely lively discussions. This method of handling the papers seemed to have a very great advantage over the standard methods, which usually result in very little time being left for discussions.

As a result of these open, and sometimes very heated discussions, many facts were brought out and many misunderstandings clarified.

In the session on pulp and paper consumption, production and trade in Latin America, it was pointed out that paper consumption tends to rise much more rapidly than per capita income, for example. Broadly speaking, it was pointed out that in Latin America for every 1% of income growth, paper consumption tends to rise by 1.75%, which points up the great need for increase in domestic production if paper supplies are to keep up with the developments in other sectors of the economy. The current prospects for the future supply appeared to indicate that the established producers will be unable to meet probable rise in demand.

Allowing for a moderate annual rate of increase, it was estimated that by 1965 consumption of paper in Latin America will have doubled. Even when allowing for the present rate of imports to continue, and taking into consideration all existing plans for expansion for the industry, it appeared there would still be a tremendous deficit by 1965 unless existing plans for expansion could be increased very greatly.

In subsequent discussions all possible methods and problems connected with meeting this deficit were discussed. Problems connected with using the vast reservoirs of tropical hardwoods were discussed at length. The secretariat did an outstanding job preparing information on the capital requirements and complete cost data on hypothetical mills set up in two different tropical forest regions and compared these capital requirements and cost data with similar mills set up in developed areas such as Sweden. I believe that for the first time the great multitude of problems connected with establishing pulp and/or paper mills in tropical hardwood forests were brought out in proper perspective.

Following a most complete discussion of the use of tropical hardwood forests, all other fibrous raw materials available in Latin America were covered. These included the plantation pulpwood of both coniferous and hardwood varieties and the use of bagasse and other agricultural residues. The technical and economic problems connected with use of these materials were compared with the problems of tropical hardwood forests and there many spirited discussions resulted among advocates of the various types of raw materials. Many excellent papers were given by experts from many parts of the world who had had extensive experience in using coniferous plantations, eucalyptus plantations, poplar plantations, bagasse and other agricultural residues.

One of the most interesting sessions was that on financing of pulp and paper development. In earlier sessions, rather complete information was presented on capital requirements for mills of all types and mills using many types of raw material. At the same time, the technical problems, including the choice of processes for raw materials in the various areas were discussed at great length. Therefore, after arriving at many technical solutions and estimated capital requirements, there was

a tremendous amount of interest on the part of all of the delegates as to just how these mills might be financed.

Possible methods of financing were discussed by financial experts of many countries. We technical men, particularly, were greatly enlightened and I think the meeting accomplished a great deal in bringing about a better understanding of the inter-relationship of technical, economic and financial factors.

NAMES OF THOSE REGISTERED— Registered for the first Latin-American Pulp and Paper Conference of its kind, ever held—a list especially air-mailed to PULP & PAPER from Buenos Aires for presentation here—were:

Orlando D'Adamo, Bosques Ordenados, S. A.; Leocadio Almeida H., Celulosa Argentina, Buenos Aires; Patricio Asenjo, Corp. de Fomento de la Produccion, Chile; Joseph E. Atchison, Parsons & Whittemore, NYC; Pascual Allemano and Vicente Basibotto, Federation of Employes of Paper and Carton Industries, Buenos Aires; N. Battenberg, Industrias Reunidas Francisco Matarazzo, Sao Paulo, Brazil; Carlos Benko, Santista de Papel, Sao Paulo; Knut Beregard, Karlstad Works, Karlstad, Sweden; Jonny Bergen, La Papelera, La Paz, Bolivia; Johan Bring, AB Ekstroms, Stockholm; Oscar E. Bruschtein, Manuel Teitelman, Buenos Aires; Angel Cantoni, Papelera Rio Parana, Buenos Aires; Francisco Cataldo, Celcar S.R.L., Buenos Aires;

Enrique Catarinou, Papelera San Isidro, Buenos Aires; Edmundo Cavalari, Paper Industry Syndicate, Sao Paulo, Brazil; Joao Cavalari S., Sao Paulo Federation of Industries; H. W. Clayton, W. R. Grace & Co., NYC; H. K. Collinge, Pulp and Paper Processes, Montreal, Canada; T. M. Cook, W. R. Grace & Co., NYC; Jose Correa S., W. R. Grace & Co., Lima, Peru; Dante S. Cusi, Industrial de San Cristobal, Mexico City; G. H. Chidester, U. S. Forest Products Laboratory, Madison, Wis.; Jorge Dujan, Papelera Rio Parana, Buenos Aires; Eduardo Dumontet, Denti Ltd., Buenos Aires; Hector F. Dupres, La Papelera Argentina; Luis Escobar Garcia, Instituto de Fomento Industrial, Bogota, Colombia; Horacio Farias, La Papelera Argentina, Buenos Aires; Jose Fernandez A., and Valentin Fernandez, Employes Federation of Paper and Paperboard Industries; Juan di Filipo, Celulosa Argentina, Buenos Aires; Horacio Fuentes, Papelera Rio Parana, Buenos Aires; Rena Gachot, SPVEA, Belem, Brazil;

Hans Wilhelm Giertz, Swedish Forest Products Laboratory, Stockholm; Julius Grant, Pulp and Paper Research Co. Ltd., London, Eng.; Lamberto Golfari, Celulosa Argentina, Buenos Aires; Jorge Guerra, Banco de Fomento Agricola e Industrial de Cuba, Havana; J. Alfred Hall, U. S. Forest Products Laboratory, Madison, Wis.; James D. Hedges, Compania Rayonera Cuba, Havana; Gunther Heiman, Melhoramentos de Sao Paulo Co., Brazil; Gunther Hennig, Melhoramentos de Sao Paulo; W. O. Hisey, Sandy Hill Iron & Brass Works, Hudson Falls, N.Y.; I. A. de Hulster, Government Forest Service, Paramaribo; Ciro Humbolt, Bolivia Embassy, Buenos Aires; Burley M. Hutchins, Rust Engineering Co., Pittsburgh, Pa.; R. B. Jeffreys, Australian Paper Manufacturers Ltd., Melbourne; R. Johansson, Elof Hansson Co., Goteborg, Sweden; Guillermo Kurhl, Ipasa. Ind. Pap. Americana; Karl Landegger, Parsons & Whittemore Inc., NYC; E. C. Lathrop, U. S. Northern Utilization Research Laboratory, Peoria, Ill.; Carlos Lea, La Cooperativa Vitalicia, Valparaiso, Chile; Jose Carlos Leone, Banco Nacional do Desenvolvimento Economico, Rio de Janeiro; Armando B. Lorenzon, La Papelera Argentina;

Guillermo Magdalena, Workers and Employes Federation, Buenos Aires; Stacey May, Rockefeller Foundation, NYC; Eduardo Marchegiani, Papelera Marchegiani; Wieslaw Markowski, Celulosa Argentina; Dana C. McCoy, Rust Engineering Co., Pittsburgh; Francisco Mendoza, Consejo de Economia Nacional de Venezuela; H. K. Metcalf, John Thompson Water Tube Boilers Ltd., NYC; Jacques Michon, Administrador de Batineyret, Paris, France; Enrique Monros, Nacente, Industrias Argentinas del Papel; W. H. Morell, Parsons & Whittemore Inc., Sao Paulo; Lino Morganti, Refinadora Paulista, Sao Paulo; A. Navarro Sampaio, Paulista da Estrada de Ferro Co., Sao Paulo; Horst Niethammer, Aschaffenburger Zellstoff, Redenfelden, Germany; Edmundo Paul, Celulosa Argentina;

Jorge A. Pegoraro, La Papelera Argentina; Mario Pineiro, Papelera Rio Parana, Buenos Aires; Felix Proskowetz, Casa Gildemeister, Lima, Peru; Americo E. Rava, Manuf. Papeles Victoria; Ramon Remolina, Banco de Fomento Agropecuario del Peru, Lima; Domingo Remondino, Workers and Employes Federation, Buenos Aires; Joaquin Roza, De la Roza Corp., Havana, Cuba; Ladislao Rys, Industrias Klabin do Parana de Celulosa, Curitiba, Parana, Brazil; Angel San Martin and Jose Sanzone, Workers and Employes Federation; P. R. Sandwell, Sandwell & Co. Ltd., Vancouver, B. C.; Walter Scott, Scott, Parnell & Partners, Trinidad and England, Guatemala City; Enrique Scotto, Celulosa Argentina; Enrique Thielen, Consejo de Economia Nacional de Venezuela, Caracas, Venezuela; E. W. Tinker, American Paper & Pulp Assn., NYC; Fausto Urencio, Bank of Mexico, Mexico City; Enrique Valente, Bosques Ordenados Co.; Gianfranco Vastalegna, La Papelera Argentina; Maurice Viaud, French Embassy, Buenos Aires; Pedro Vicien, Papelera Rio Parana, Buenos Aires; Guido Vucetich, Corporacion de Fomento de la Produccion, Santiago, Chile; Hasso Weiszflog, Melhoramentos de Sao Paulo Co., Brazil.

NINE MONTHS SALES AND EARNINGS FOR 1954

	Net Sales (000)	Income Bef. Taxes (000)	% of Sales	Net Income (000)	Net Per Share
Rayonier Incorporated	$ 63,008	$17,010	27.0	$ 8,715	$3.85
Diamond Match Company	76,898	6,055	7.9	3,355	2.51
Eastern Corporation	15,459	1,080	7.0	612	1.64
Glatfelter (P. H.) Co.	12,782	2,526	20.0	1,156	5.12
Hammermill Paper Co.	20,737	1,743	8.4	909	1.04
Mead Corporation	83,814	8,578	10.2	4,152	3.38
St. Regis Paper Co.	149,431	21,929	14.7	11,457	2.01
Scott Paper Co.	132,355	22,747	17.2	10,852	1.50
Union Bag & Paper Co.	78,872	17,297	21.9	8,191	4.62
Container Corp of A.	139,050	22,962	16.5	11,022	4.31
Gair (Robert) Co.	87,005	9,148	10.5	3,770	1.67
Sutherland Paper Co.	41,833	6,684	16.0	3,208	3.21
General Package Corp	n.a.	3,718	--	1,795	3.65

n.a. - Not Available

What Record Shows in 9 Months of 1954

Especially prepared for PULP & PAPER is this 9 months' report on sales and earnings of representative companies. This was done by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guarantee of accuracy is made.

Many reports for 9 months were not received when this was compiled. But still an attempt was made to group similar types of operations, starting with a market pulp firm, northern integrated operations next, then companies with numerous divisions, then board manufacturers and finally, a converter.

PULP & PAPER

WHAT'S GOING ON IN THE MARKET PULP WORLD

Woodpulp for New Filters

Good news for the market woodpulp industry is that the current, fast-growing fad for filtered cigarets has opened up a new outlet for woodpulp.

As everyone knows, the scary medical reports, etc., on cigaret smoking effects has caused cigaret manufacturers to feature the filters, and in some cases the filter is a considerable part of the whole cigaret.

Bleached kraft woodpulp is used in manufacturing this filter paper, PULP & PAPER has learned. The conventional cigaret paper is made from special grades of flax, most of it grown only in California and Minnesota. The effect is, woodpulp now encroaches on the flax portion.

CANADIAN PULP INCREASE—Canadian Pulp and Paper Association reports a 6.7% increase in Canadian pulp production for the first nine months of this year over the corresponding period in 1953. It was nearly half a million tons over 1953. Tonnage used in Canada increased 4.2%, and exports 12.8%.

BRITAIN IS CONCERNED—The main problem confronting the United Kingdom paper industry now is whether future supplies of papermaking raw materials will be sufficient to cope with the demand for the finished products, PULP & PAPER learns from London sources. Winter months will prevent shipments of woodpulp from Scandinavian ports.

The general opinion in the United Kingdom paper trade seems to be that control of pulp and paper imports should and could be ended at the present time or, failing this, that the government should at least allocate additional currency for the purchase of imported woodpulp to assist the industry in improving its stock position.

The United Kingdom paper industry realizes however, that it is unlikely that the control of woodpulp imports will be abolished while supplies of newsprint are still subject to restriction. There is hope of ending newsprint rationing during 1955.

SO. AFRICA TO RELAX CONTROL—The South African economic affairs minister announces import controls on woodpulp and other raw materials, and also industrial machinery, will be greatly relaxed in 1955. How much will be determined by the Union's balance of payments. A *Government Gazette* will publish particulars.

Australia, after relaxing controls, recently returned to tighter control measures.

HAMILTON TOURS EUROPE—Walker Hamilton, president of Riegel Paper Corp., and executive of Riegel Carolina Corp., its market pulp and own-use pulp subsidiary, recently made a six weeks tour of Europe.

GRACE MILL TO NEED PULP—More woodpulp probably will be required for the W. R. Grace & Co. semi-chemical bagasse mill at Paramonga, Peru, when it ups production 50% with a newly ordered Sandy Hill 110-in. 35-tons-a-day cylinder machine. The mill has for years mixed purchased pulp with its bagasse. The new machine will make coated board.

NEW CELLUCOTTON PLANT—A modern Kleenex-Kotex and cellucotton wadding converting plant will be built at Ayleford, England, by a reorganized and expanded company jointly owned by Kimberly-Clark, International Cellucotton and Albert E. Reed & Co. Ltd.

WORLD MOVES TO RECLAIM PAPER—The Waste Paper Section of the Bureau International de la Recuperation, meeting in Paris, is preparing to ask all paper manufacturers to adopt distinctive markings for wet strength papers. The American Cyanamid process for removing melamine from waste paper to facilitate its reuse also will be communicated to various associations in other countries.

PLAN B.C.'s NEXT MILL

British Columbia's next pulp mill will probably be built near Cowichan Bay on the east coast of Vancouver Island, and the man who will build it is E. P. TAYLOR (left) of Toronto, shown here chatting with W. A. C. BENNETT. Premier of the provincial government which must approve the forest management license being sought by Mr. Taylor in behalf of his B.C. Forest Products Ltd., of which he is Chairman. Mr. Taylor told PULP & PAPER the new mill would cost about $25,000,000 and operate principally on chips from his company's sawmills and non-lumber logs.

CORRECTION—In last month's new note of the trip to Europe of E. E. BURNS, sales manager for Canadian Forest Products pulps, it was erroneously stated his company plans a new pulp mill. The new one is planned by B.C. Forest Products on Vancouver Island.

MORE CELLOPHANE—With the growth of cellophane as a market for woodpulp, it is noteworthy that plans of Olin-Mathieson Corp. for the new cellophane plant at the also newly named town of Olin, Ind., calls for an operation duplicating in size the one Olin built at Pisgah Forest, N.C., which started up in 1951, operating under Ray Bennett's direction.

The new one will be on the Wabash River, near Covington, Ind., doubling Olin-Mathieson output of cellophane. Consideration is still being given to an optioned site at Red Bluff, Calif.

TRIBUTE TO INVENTOR—Regarding growth of cellophane outlets for woodpulp, a copy of the French *Revue des Papiers et Cartons* (Oct. 1) issue reached PULP & PAPER, which tells the story of how cellophane was invented in 1911 at Blanchisserie et Teinturerie de Thaonles-Vosges by Dr. J. E. Brandenberger of Berne Univ.

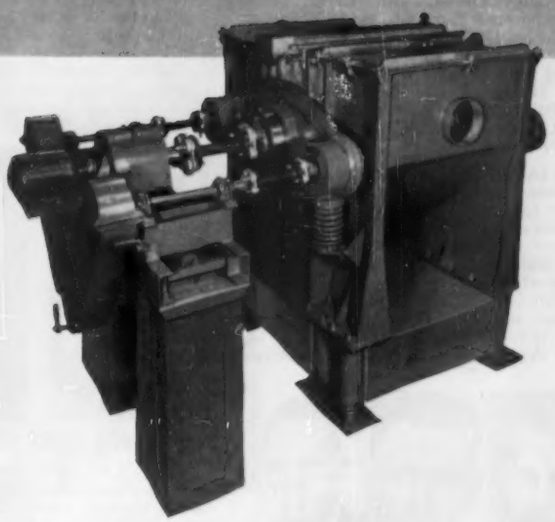
NEW CELANESE FIBER—Celanese Corp. of America has started commercial production of Arnel, a new cellulose triacetate fiber previously known under the laboratory name of X-100. Production of the new fiber in the staple form will be emphasized. Arnel staple is priced at 55¢ a pound and is currently produced in 2.5 denier.

PENTAGON PULP FOR SALE—Downingtown Mfg. Co. is building a special pulper that will disintegrate and defiber 2,000 lbs. an hr. of Pentagon confidential papers and other waste. A Downingtown wet machine will then convert the stock into 95% by 68 in. pulp sheets which it hoped will be salable to mills at rate of 24 tons per day.

Someone quipped that now Sen. McCarthy lost his investigations chairmanship, the Pentagon may not be in a hurry to destroy the papers, but then there is always another election in the offing.

HEADS PURCHASES—Edwin S. Ladley has been appointed director of purchases for Hercules Powder Co. succeeding Lawrence J. Finnan, Jr., who will retire at the end of the year.

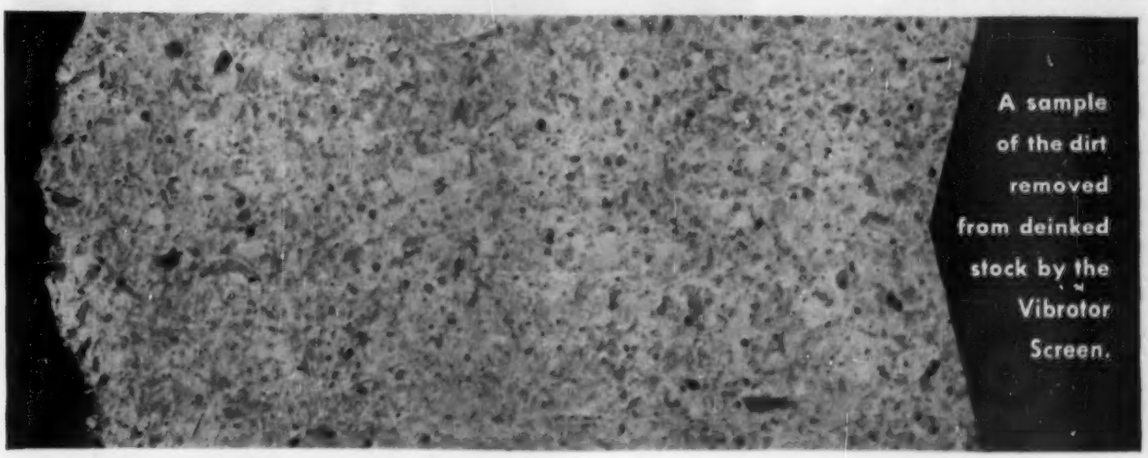
V for VERSATILE for VIBROTOR



Bleached, unbleached, semi-chemical, high density, dissolving pulps, deinked stocks — the Bird Vibrotor Screen takes 'em in stride. It delivers big tonnages, handles high consistencies, takes up minimum space, calls for minimum maintenance.

Whatever your screening problem, you will do well to look into the Vibrotor Screen.

BIRD MACHINE COMPANY
South Walpole, Mass.



A sample of the dirt removed from deinked stock by the Vibrotor Screen.

PULP & PAPER

PICTURE NEWS FROM NORTH, EAST, WEST AND SOUTH

IN NEW MIDDLE WEST POSITIONS

GEORGE W. MEAD II (left), native of Wisconsin Rapids, Wis., graduate of Yale with a master's in science from Institute of Paper Chemistry, '52, is new Director of Product Development, Consolidated Water Power & Paper Co., it is announced by Tech. Director G. K. Dickerman. Young Mead, named for his grandfather, retired head of the company, and son of Pres. Stanton Mead, has been Chemist and Pulping Research Chief at the mill in the past two years. He is married and has 3 children.

WILLIAM JOHNSON (right), recently appointed Assistant Director of Purchasing for Gardner Board & Carton Co., Middletown and Lockland, O., has been with Gardner since 1949, for several years as Chief Industrial Engineer. Born in Brooklyn, graduate of Brooklyn Polytech, he was with General Electric as Planning and Methods and Wage Rates Supervisor, and with American Bosch Corp as Asst. to the V.P. of Mfg. and New York Office Mgr.

NEW DUTIES AT EXPANDED SCOTT MILL AT EVERETT

With No. 3 and 4 Tissue Machines being added in 1955, and sulfite pulp production now over 700 tons, with half of it changed to ammonia base, a new alignment of duties is announced at Scott's Everett, Wash., mill for these Staff Assistants to PAUL BALDWIN, Vice Pres.: L to r: N. WILLIAM COSTER, now Pulp Mill Mgr. of biggest sulfite mill in world, also in charge of wood preparation and woodyard. For many years he was Supt. of the Soundview mill, before Scott acquired it.
LOREN V. FORMAN, Tech. Asst. in charge of Pulp and Paper Tech. Control, Research and Instrument Dept., and overall charge of Paper Mill operation, Engineering and Maintenance Depts. He is an ex-Wisconsinite who made his mark at Institute of Paper Chemistry.
CHARLES D. DICKEY JR., Administrative Asst. for Accounting Dept., in charge of all Purchasing, Taxation, Insurance, Traffic and Stores.

UP LADDER IN SCOTT PAPER

ROBERT I. THIEME (left), appointed new Asst. Plant Mgr., Scott Paper's big parent mill, Chester, Pa., came to Scott with the Soundview, having been at the Everett sulfite mill since 1934 (except for 5 yrs. in the Navy, finally as Commander), until made Mgr. of the Anacortes, Wash., mill last year. He was Tech. Director at Everett for 7 years. WALTER MILLER (right), who succeeded Mr. Thieme as Plant Mgr. at Anacortes. He had been Plant Engineer there.

AT BUENOS AIRES MEETING

DR E. C. LATHROP (left), went to Latin American conference from U. S. Government's Northern States research center on agricultural residues, Peoria, Ill.
KARL F. LANDEGGER (right), President of Parsons & Whittemore, building a $6,000,000 eucalyptus bleached pulp mill in Brazil, told delegates new mills could quickly pay for themselves.

C-Z PROMOTIONS

DUDLEY CHURCH (left), Technical Supervisor at CZ Camas mill since 1952, transferred to Crown's San Francisco headquarters Nov. 1 as Research Liaison Assistant. ROBERT G. STEWART (right), formerly Assistant Technical Supervisor, was promoted to Technical Supervisor.

NEW BAGLEY-SEWALL EXECS

A. G. GIBSON (left), new Asst. Mgr. of Bagley-Sewall Corp., division of The Black-Clawson Co., was former Chief Engineer of the B-C Hamilton, O., division. WARREN W. MACKLEM, also from Hamilton, has likewise moved to Bagley-Sewall Corp., Watertown, N.Y., as Sales Mgr. according to Bagley-Sewall Gen. Mgr. W. W. White, Jr.

LIKE FATHER, LIKE SON

Here's a famous pulp and paper industry father-and-son team, snapped by a PULP & PAPER Editor. WILLIAM E. GREENE (left), Pres. of Wm. E. Greene Corp., Woolworth Tower, New York City, representatives of Stowe-Woodward and Lodding Engineering, is giving a bit of advice to his son and business associate, ED GREENE.

MAYBE THESE VISITORS WILL BE CALLING UPON YOU

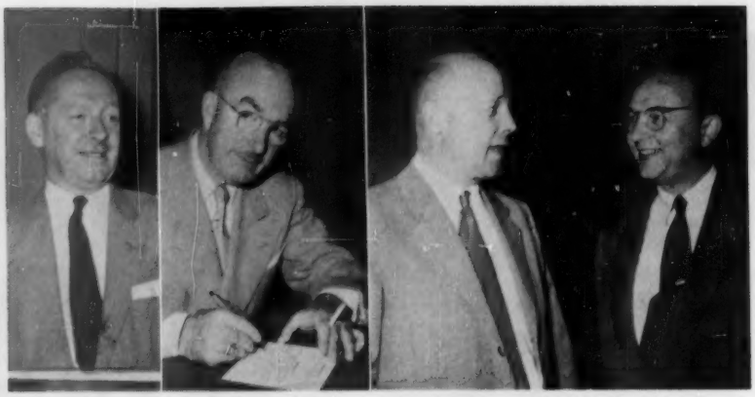
From the Palatinate of Germany, just north of Strasbourg, came these brothers in family-owned cigaret paper, tissue and writing paper mill—J. Glatz Paper Mills, at Niedenfels. ROBERT GLATZ, left, is Technical Mgr. HERBERT GLATZ, right, is Supt. They buy North American Pulps—including Harmac and Bloedel.

value in a fine product

reflects the experience and skills of its makers.

value in Fourdrinier wires is a matter of record ... paper quality and production records in mills throughout America reflect the fact that Appleton Wires are Good Wires!

APPLETON WIRE WORKS, INC., APPLETON, WISCONSIN



NEW KEY MEN ON ENGINEERING PROJECTS . . .

Top (l to r): LYLE C. JENNESS, Head of Chem. Eng. Dept., U. of Maine, new Asst. Chmn. of Enginr. Div., also new Chmn. of Chem. Engr. Committee. M. J. (JOHNNY) OSBORNE, Electrical Supt., Bowater Southern Paper Corp., new Electrical Committee Chairman LOUIS R. MRACHEK, Mead Corp., Kingsport, Tenn., new Chmn. Mill Maint.-Mat. Committee.

Below—(l to r): JOHN MacBRAYNE, Industrial Engr., Union Bag, Savannah, now heads combined Ind. Engr. and Mat. Handling Committee. VINCENT P. OWENS, Pulp and Paper Sales Mgr., Combustion Engineering, new Secy. of Steam and Power Committee. H. J. KINGSBURY, Allis-Chalmers Mfg. Co., Secy. of Mill Maintenance and Materials Committee.

PARTICIPANTS IN QUAKER TOWN TETE-A-TETES

WM. R. McNALLY (left), now Dist. Sales Engr. for Link-Belt in Pittsburgh, and still also active as L-B's pulp and paper specialist, ended his regime as Chairman of Materials Handling Committee, now merged into Industrial Engineering Committee. KENNETH J. McKENZIE, Supt. of Paper Mills Div., Eastman Kodak Co., and Chairman of Hydraulics Committee, was snapped by P & P while registering. W. M. WYBURN, Federal Paperboard Co., Chairman of Steam and Power Committee, talks over the meeting with RAY W. FOSTER, Champion Paper & Fibre Co., Canton, N.C., who retired as Chairman of Electrical Engineering Committee. Mr. Foster's paper on motor controls was praised by his successor as Chairman, M. J. OSBORNE, in review written for PULP & PAPER.

Controversies Are Given an Airing

On voltages for operators' controls and outdoor power plants—advice re chippers and down-time chargers

BY M. J. OSBORNE

AC MOTOR CONTROLS—Ray Foster, (Champion Paper, Canton, N.C.) retiring chairman of the electrical engineering committee, presented the outstanding points in his paper, *"Application of AC Motor Controls,"* in a very interesting manner. Ray used quite a few slides showing motor curves, control circuits, and pictures of modern starters, motor control centers and operators panels.

AC motor control is a very broad subject with widespread boundaries and many subdivisions. The application of AC motor controls is practically limitless. Mr. Foster covered his subject as thoroughly as time permitted and gave us a report which we will use as a reference. I have been over this paper several times since I returned and I find that the major points have all been set forth and discussed.

We have all needed more discussion on AC motor controls. The steel industry voices its opinions so loudly that there is a special industry classification of "steel mill controls."

There is somewhat of a controversy as to whether operators' control devices such as pushbuttons and selector switches should be connected at operating voltages such as 440 volts or to a separate low voltage control system. I appreciate Mr. Foster's work and hope that we can develop some standards for AC motor controls in the paper industry.

CHIPPER DRIVES—I read the paper, *"The Selection of Chipper Drives."* This paper represented three years' work by the subcommittee and data from 39 mills. It was apparent that there were appreciable variations in the power requirements for chipping and more important than these variations was the complete lack of consistency in methods of motor application both as to type and rating.

The subcommittee recommended 7 hp hours per cord for chipping soft woods, and 10 hp hours per cord for chipping hard woods. Two different systems of motor selection have been developed, checked and approved for presentation to Tappi. Both of these

Continued on page 122

Mr. Osborne is Chairman of Tappi Electrical Engineering Committee and Electrical Supt., Bowaters Southern Paper Corp.

EDS. NOTE—The opinions expressed in this review of highlights of the electrical and steam and power sessions of Philadelphia Engineering Conference are Mr. Osborne's own opinions. Mr. Osborne has been writing these reviews for several years for PULP & PAPER.

At Philadelphia, he was honored by being elected as the new chairman of Tappi's Electrical Engineering Committee. PULP & PAPER joins with his many friends in extending its sincere congratulations.

His interest and eagerness to continue worthwhile electrical engineering projects for this industry by his committee and sub-committees, and to initiate new ones, is indicated in this article.

A graduate of Georgia Tech, he was with the Atomic Energy Commission at Oak Ridge and with Crossett Paper Mills, before going to Bowaters new mill as its electrical supt.

STEVE BAISCH TAKES OVER CORROSION PROJECT

Snapped by PULP & PAPER at Philly (l to r): J. R. LIENTZ, Union's Pulp & Paper Div. Mgr., who presided over corrosion sessions for last time; ED W. HOPPER, Development and Research Specialist, Metallurgical Dept., Crucible Steel Co. of America, congratulating Chairman of newly created Corrosion Committee, STEVE J. BAISCH, Design Engineer in charge of Engineering, Thilmany P & P, while WILLIAM J. SHELTON, Pulp and Paper Mfg. Supt., Longview Fibre Co., looks on approvingly. Mr. Baisch, veteran of Africa and Sicily invasions, is a Wisconsin grad, '42. Birthplace—Ironwood, Mich.

TOOK PART IN CORROSION SESSION:

Top row (l to r): NICHOLAS SHOUMATOFF and LOUIS DE LA GRANGE, both of New York Engineering Dept., West Virginia P & P; and WALTER B. PARKER, Hartford Steam Boiler Inspection & Insurance Co.

Below (l to r): HERBERT O. TEEPLE, Inco's Corrosion Specialist; BOB DAVIS, Dist. Engineer, Chicago Bridge & Iron, Birmingham, Ala., and EDWARD W. KEITH, Soda Div. Supt., Penobscot Chemical Fibre Co.

Where Corrosion Study Stands Today

Review of Philadelphia discussions reveals many points of disagreement, but some ideas gain acceptance

• The kraft pulp industry, plagued since World War II years by the phenomena of accelerated corrosion rates in carbon steel digesters, has still not reached a point where genuine industry-wide conclusions can be drawn.

This was obvious to anyone listening to the papers and discussions on this grave and costly problem at the 9th Engineering Conference of the industry in Philadelphia in late October. It is just as tantalizing to the industry's chemical engineers and the research men of steel companies and digester builders as it was when industry leaders in U. S. and Canada first became alarmed about it several years ago. And they all seem to be just about as far from agreement on really important conclusions as they were then.

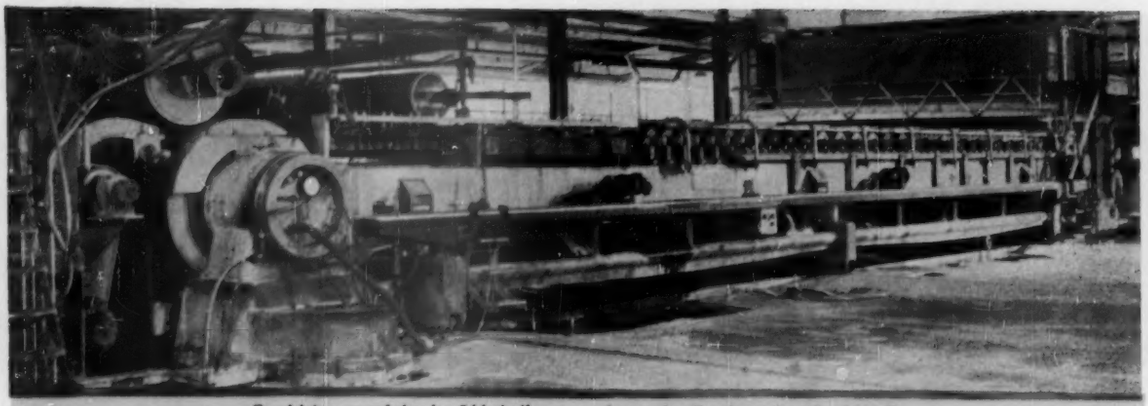
In fact, some conclusions that seemed to be jelling fast, say a year ago, were surprisingly more unpalatable than ever to the experts who did the talking in Quakertown. For instance, no one rose at that meeting to contend that steel chemistry was the major factor in digester life, as happened in past meetings, though it might be conceded as having some influence on corrosion resistance.

EDS. NOTE—This is PULP & PAPER's own review of the kraft digester corrosion discussions at Philadelphia Engineering Conference. These views may not be in agreement with those of some of the many experts who have been devoting a large part of their time in recent years to this problem. But we believe this progress report is on sound ground, and that many industry leaders will agree with it.

It is true that some ideas are gaining in acceptance. For instance, that high tensile steels corrode more rapidly than others. That some of the newer alloys are not the answer to the pulp mill prayers. That where liquor or chips impinge on surfaces are danger areas, liquor spattering and lodging of chips or pulp in concentrated areas should be avoided. That higher sulfidities may be blamed for corrosion, along with faster or increased cooks. That some chemicals might be added in a cook to decrease corrosiveness; oxidizing and reducing compounds should be studied, and even minor changes in chemistry may

"GOOD-BY AND GOOD LUCK!" IN PORTUGUESE OR ENGLISH

He has been "commuting" so much to Brazil for the rebuilding job on West Virginia's new mill properties in that country in past year or so, CHARLES J. SIBLER might have said his farewells in Portuguese as well as English when he ended three successful years as Chairman of the "Blue Ribbon" Engineering Division of Tappi. He did big job—reorganizing and stepping up its activities—started ball rolling for a water and air pollution project in future. Born in Zurich, Switz., came to U.S. in 1920.



Fourdrinier wet end showing 54-inch diameter suction couch roll and new lump breaker roll

25-Year-Old Liner Machine Beats Obsolescence

Now competitive in speed, tonnage and quality

A well-known Southern kraft mill recently completed a three-year modernization program, starting with the replacement of two-thirds of the original dryers with high-pressure dryers constructed for 150 psi, revamping of the sectional electric drive, and ending with a complete new fourdrinier wet end.

The original machine, built by Puseyjones in 1929 for a speed of 1000 F.P.M., was equipped with fourdrinier wet end for wire 240 inches wide and 80 feet long, and 36-inch suction couch roll.

The new fourdrinier of latest modern design is constructed for a wire 246 inches wide and 128 feet long with 54-inch diameter suction couch roll, and Rapidrape arrangement for fast, convenient wire change. Looking toward the future, the new fourdrinier was designed for a top speed of 2000 F.P.M.

Before modernization, the drying capacity was limited by the existing dry part comprising 58 paper and eight felt dryers of low pressure design. Seventeen of these dryers were rebuilt with new heads suitable for 75 psi and 41 were replaced with 150 lb. dryers. Six additional felt dryers were also installed. All dryers were equipped with roller bearings.

An increase of 30% in total production of liner board of higher grade has already resulted from the modernization program.

Talk over your machine rebuilding plans with Puseyjones engineers. A call or a letter will bring a nearby representative to your mill.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery

Fabricators and Welders of all classes of Steel and Alloy Products

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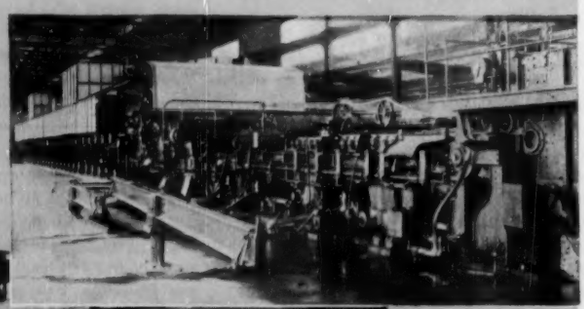
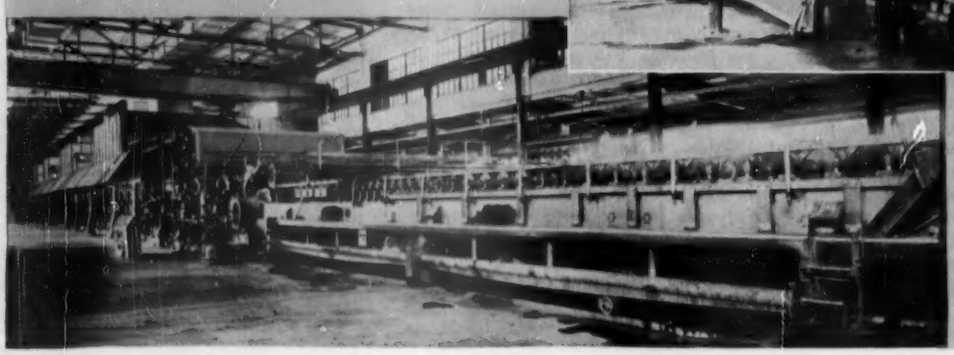




Machine as originally installed in 1929

Machine rebuilt in 1954 with new fourdrinier wet end

perform near-miracles.

But, everyone seemed agreed that more data is needed—more facts and less theory.

RESEARCH NEARS FIRM GROUND—Nicholas Shoumatoff, West Virginia Pulp & Paper engineering staff, New York, and Herbert O. Teeple, International Nickel Co. corrosion engineering specialist, prepared a report on digester corrosion measurements, based on Tappi's industry-wide survey of 1953, plus some 18,000 new measurements. Exhaustive studies and calculations made for the industry by Armour Research Foundation were interpreted in their paper, which Mr. Shoumatoff presented. Despite all of this data-gathering and study, it was still a hazardous thing to come to any really firm and convincing industry-wide conclusions.

However, as Mr. Shoumatoff said, the research is on somewhat firmer ground than it was a year ago, there is a better picture presented of historical perspective, and good standards seem to be established for judging the reliability of data.

James R. Lientz, Union Bag's pulp and paper division mgr., and chairman of Tappi's chemical engineering committee, as chairman, and Mr. Shoumatoff, as co-chairman and chairman of the corrosion sub-committee, ended their terms of leadership. Indicating the importance attached to the corrosion dilemma, a full-fledged corrosion committee came into being headed by Steve J. Baisch, design engineer in charge of engineering at Thilmany Pulp & Paper.

(Next new project that will come into flower in these annual Engineering Conferences will deal with stream and air pollution. It is in the works, but wasn't ready to start rolling at Philly).

NEW HEAD MAN AND "FIRST LADIES" OF THE ENGINEERS

PULP & PAPER's own picture shows wife and daughter with newly elected Chairman of Tappi Engineering Division—JOHN D. LYALL, Project Engineer, Armstrong Cork Co., Lancaster, Pa. Born in eDlhigh, N. Y., a 1930 m.e. grad of Cornell, Mr. Lyall worked 5 yrs. with Int. Paper at Glens Falls and Ft. Edward mills. In 1937 he joined Armstrong. Biggest job has been directing design and construction of its $7,000,000 Macon, Ga., plant.

WHAT WEST VIRGINIA LEARNED—Louis de la Grange, of West Virginia's New York engineering department, led off the corrosion session with a paper in which he said three years' experience in his company's mills indicate use of elemental sulfur mixed with cooking liquor is the best method of reducing corrosion. No thickness loss resulted in these digesters.

Re-designing the cooking liquor spray to prevent it running down the side walls, use of stainless steel overlays, and use of deflectors to form a thin film of carbonate scale, were three other ways to reduce corrosion, he said.

Mr. De la Grange said corrosion had been costing West Virginia $180,000 per year. But 17 of its digesters have served 30 years, most others have served 16 or more years. Only three have had to be replaced, but these comparatively new ones, installed in 1924, and were replaced in the last 3 years.

In answer to a question, he said digesters with cooking liquors of 26% to 29% sulfidity had the highest corrosion rates, these being used without the addition of elemental sulfur in the cooks.

A REPORT ON CORROSION FINDINGS—Walter B. Parker, of Hartford Steam Boiler Inspection & Insurance Co., presented a paper which was a well-organized summary of a tremendous amount of research, all previously reported in the corrosion meetings or other industry reports.

He recalled inspections in the field by Ed W. Hopper, of Crucible Steel Co. of America, a veteran member of the Tappi corrosion committee, indicating that the soundness of steel may have a marked influence on corrosion, and that high carbon-silica killed steel had a tendency toward rapid attack, and killed or rimmed types were not a definite answer to the problem.

Mr. Parker quoted a work in which Merrill Scheil of A. O. Smith Corp. collaborated, showing silicon was detrimental.

Speeded-up production is an important reason for corrosion, said Mr. Parker, and he presented the interesting proposal that, in view of this, measuring rates per 1,000 cooks instead of per annum is a more accurate method, revealing less increase in corrosion rates in recent years. He recommended using both rates to get more facts.

Again quoting Mr. Hopper, he cited these reasons for increased corrosion:

Higher sodium sulfide, increased chloride, some chemical compounds in white liquor which are not normally reported in analyses, and air in liquor.

These factors, he said, reduce corrision: Increased sulfate, deaeration by boiling or flushing. A careful check of effects of complex sulfur com-

U.S.-CANADIAN RECIPROCITY IN ENGINEERING

You can bet this discussion would have been interesting to overhear—l to r: GUNNAR NICHOLSON, Exec. V.P. of Mfg., Union Bag & Paper Corp.; J. W. "BUMPS" HEMPHILL, Mgr., Pulp and Paper Industry, Johns-Manville Corp.; and J. S. BABBITT, Vice Pres., and J. C. NUTTER, Asst. Mgr. of Mills, Gair Co. Canada Ltd., Toronto. There are 4 Gair mills in Canada.

"Conventions Within a Convention"—and They Benefit Industry

One of the most interesting sidelights of annual Engineering Conferences of this industry is that they also have become "a Convention within a Convention" for big electrical engineering firms. Their own engineers from far and near gather here, trade notes, even hold their own sessions—and it all redounds to the benefit of pulp and paper industry.

The pulp and paper industry benefits because, after all, this industry is the No. 3 Customer of the electrical business—in some respects as rated by plant units or percentage of total investment, electrical power and applications are even more important to this industry. These men are not only seeing their customers at the Engineering Conferences—but new ideas for this industry's good also come out of their own get-togethers.

These pictures only show portions of the delegations which were sent by these companies to Philadelphia. It was impossible to get them all together for pictures, but these are representative groups of five companies—and to be perfectly fair—we show them in alphabetical order: Allis-Chalmers; Elliott Co.; General Electric Co.; Reliance Electric & Mfg. Co., and Westinghouse Electric Corp.

FROM ALLIS-CHALMERS

L. to R: J. M. DUNCAN, from Northeast; WILLIAM H. TOCK, kilns specialist; W. H. TAYLOR, Phila.; JAMES E. FINK, screens man, and Y. S. HOGG, JR., Atlanta.

ELLIOTT CO. DELEGATION

L to R: J. R. LEMMON, Dist. Mgr., Phila.; H. W. KINSEL, Dist. Mgr., Boston; H. D. MOLL, H. S. MILLS and W. M. MORLEY, all of Phila.; CECIL L. HARVEY, Paper Mill Specialist, Ridgway Div., and CHARLES L. HOEBEL, New York.

G-E—AS WE COULD GET 'EM

L to R: DAVE GEARHART, Kalamazoo, Mich.; WALTER C. BLOOMQUIST, Schenectady (Gen. Secy. of Engineering Conference); WILLIAM COUGH, Schenectady, Sales Mgr. for All Light Industries (inc. paper, lumber, printing, food, textiles); GEORGE E. SCHAAD, Schenectady, and MATT T. FINN, JR., Sales Mgr. for Pulp, Paper, Lumber.

THESE MEN FROM RELIANCE

L to R: LES W. KUTZ, Phila.; LEE BLACKWELL, Charlotte, N. C.; KEN S. LORD, Phila.; R. A. McDOWELL, Cincinnati; FRANK LEITNER, Charlotte, N. C., and LEON DUNNING, Boston.

WESTINGHOUSE CREW

L to R: C. P. WALKER, Gen. Industries Section Mgr. heading pulp, paper, lumber, etc., looks over his "crew"—R. R. STOLZ, Paper Mills Sales, Pittsburgh hqtrs.; FLOYD R. LINENGER, Norfolk, Va., and FRANK ROLSTON, Phila.

pounds, oxidizing and reducing compounds and gases was recommended by Mr. Hopper.

CROSSETT AND TYRONE EXPERIENCE—Mr. Parker reported that attempts to impede corrosion at Crossett Mills by silicon dioxide scale failed. At West Virginia's Tyrone mill, digesters operating for 28 years without serious corrosion suddenly showed excessive rates when the sulfidity source was changed to a by-product sodium sulfide. Polysulfide (sulfur added to sodium mono-sulfide) was added to caustic liquor, reducing corrosiveness of the cooking liquor.

Chip impingement causes digester erosion and can be avoided by care in filling. Mr. Parker also cited the hot plate boiling cause—liquor splashing—brought out at Crown Z's camas mill in its joint report with Babcock & Wilcox engineers, (fully described in PULP & PAPER April 1953 issue, p. 44). Paths of liquor circulation, impingement of nozzles, steam washing, drafts through open windows, thermal shocks, unused fittings and galvanic action were other corrosion causes enumerated by him.

Liquor chemistry and galvanic effects were recommended as subjects for future study.

SOME DISCUSSION POINTS—Discussions brought these points out:

Spraying or metallizing of digesters periodically has been tried as a means of halting corrosion. Some mill men questioned the feasibility of sealing the sprayed surface with a resin or plastic coating.

A caution—don't put two kinds of metal in a digester without watching for trouble at the line of separation. A protective film, if formed, will avoid trouble.

THEY DID A LOT OF THE WORK

In making the Philly conclave a success, lots of credit is due (l to r): HENRY S. DIMMICK, Dist. Mgr., Phila., for SKF Industries Inc., Secy-Treas. of Conference Committee; JACK C. HARPER, Chief Engineer, Downingtown Mfg., Committee Chairman, and JOHN R. CURTIS, Paper Machine specialist for Scott Paper Co., who handled hotel arrangements.

OLD AND NEW NEIGHBORS—CONVENTION BRINGS 'EM TOGETHER

Two men at left lived next door to each other 20 years ago in Pittsburgh. Philly convention brought them together again. Two men in middle now are neighbors in Nadick, near Boston. They met for first time at Philly. Man at right got a kick out of it all! They are (l to r): HARRIS THOMPSON, National Aluminate Co.; FRANK AMADON, JR., Warren Steam Pump Co.; SIEGBERT J. OETTINGER, Artisan Metal Products, Inc., stainless steel fabricators of Boston; and TANY AGRONIN, Vice Pres. of Black-Clawson Co., New York, and Gen. Mgr. of its new Pandia Div.

One representative of a company fabricating pressure vessels said there is no longer any doubt that submerged arc welds corrode faster than manual welds. It is common practice to handweld the inside to a depth equal to the corrosion allowance.

The Teeple-Shoumatoff report indicated increased productivity and high sulfidity were the only process variables that could be safely correlated to increased corrosion statistically. Corrosion was generally above the middle of digesters and off to one side. Their data did reveal how difficult it still is to figure corrosion rates, also that several inspections are necessary before drawing any conclusions re a digester, and some older digesters tend to have the best records.

Rebuild or Buy New Machine?

A Rayonier engineer gives a good answer. Kimberly-Clark designs worker's ear-muff. Lift trucks are versatile

● The perennial problem—should a machine be rebuilt or should we buy a new one?—evoked one of the hottest sessions at the Philadelphia Engineering Conference sponsored by Tappi. Engineers were outspoken—one declaring that a mill which did a rebuild job got its tonnage the hard way. Another asked how much further the mill would have gone before they called it a new machine. Of course, these statements only brought out that rebuilding jobs had many staunch advocates, too. It was a "no-decision bout."

As evidenced in several papers, engineers are becoming more aware of the gap between their own thinking and that of management and the need for talking to management in management's own terms and language. This attitude of "What will management think?" or "How will management react?" was an undercurrent in many papers.

The busy engineer or executive who devotes too much time to his job was bluntly told by James Q. du Pont, administrator assistant in du Pont's Public Relations Dept., that he is getting an almost sensual thrill out of his business accomplishments.

H. W. Prentis, Jr., chairman of the board, Armstrong Cork Co., gave some down-to-earth definitions of management, its responsibilities and functions in relation to engineering problems.

Lively discussions followed a joint presentation by John A. McPherson, Mosinee Paper Mills Co., and Harold G. Ingraham, Chas. T. Main, Inc., on rebuilding of that mill's No. 1 machine.

Here are factors considered by Mosinee management:

An engineering report showed that maximum capacity of equipment, other than paper machines themselves, was sufficient to sustain increased paper production of 165 tons from 140 tons. Beyond this apparent break point, a considerable expenditure would have been needed for pulp mill, recovery, steam, power and stock preparation to maintain an economical balance between pulp and paper.

Management saw there could be an additional source of pulp for 25 tons more of paper daily. A new paper machine would have needed an additional 100 tons and necessitated a major pulp mill expansion.

Earlier machine modernization had

been made on No. 2 and 3, and the logical choice for further change was No. 1. Harold G. Ingraham discussed the engineering aspects of the rebuilding, saying that the entire machine had to be taken out and laid flat and elapsed time from D-(down) Day to startup was six weeks.

The discussion crowd hurled questions of disbelief at the panel.

But to the question "would the management do it again?" Mr. McPherson replied "yes." He said that the big factor was that they had a sales volume and customer demand for the increased tonnage and quality.

HERE'S ONE GOOD ANSWER—E. K. Murphy, Rayonier, Inc., provided one good answer to the debate. Discussing the preparing requests for project approval of management, he declared that technical soundness is not enough to qualify a project. It must be economically worthy, he said. He urged engineers to consider the well-being of the company, and to include complete basic costs and earnings data on alternate installations, with a recommended solution.

J. M. MacBrayne, Union Bag industrial engineer, named five specific fields for industrial engineering: Methods improvement by use of time, motion, micromotion studies and flow charts; reduction of high cost and large areas required in materials handling; scale plant layouts showing how costs and labor can be reduced; determination of well-balanced, efficient use of labor, and determination of proper wage rates for jobs.

EFFICIENT REFUSE BURNING—George H. McGregor, general supt., Columbia River Paper Mills, in a paper prepared in absentia, described a wood refuse plant at M & O, International Falls, where he was recently on the staff, which handles 96 tons a day of bark, sawdust, wood pieces, etc., to produce 30,000 lbs. of steam per hr. at 450 lbs. operating pressure.

Towmotor Corp.'s Lee Cirillo said lift trucks are meeting the problem of low cost handling of larger and heavier rolls. Lift trucks are more versatile—can rotate, upend, sideshift, push, pull, grab, scoop and swing all types of loads.

To solve noise problems, Kimberly Clark's R. H. Caston and M. N. Davis suggested redesigning of noisy equipment, mostly in wood preparation, better housing and acoustical treatment, and well-fitted earplugs or earmuffs for workers. K-C has designed a special ear-muff for its workers.

Larry Moore of Black-Clawson gave interesting data on dryer bearing friction and J. C. Harper of Downingtown told how the suction hot press has increased drying capacity and reduced steam costs on machines (see PULP & PAPER's exclusive illustrated report on success of hot pressing at Longview Fibre Co., p. 68-70, July 1954 issue).

HOW TO COOL CALENDERS—Leslie G. Janett, vice president and western manager for J. O. Ross Engineering Corp., (his offices in Chicago), discussed ways of increasing calender cooling.

Facilities that can be used to increase cooling effects, said Mr. Janett, were (1) outside air instead of inside mill air, (2) continuing on with mill supply cooling water, (3) direct expansion mechanical type refrigeration, (4) atmospheric air subjected to evaporative cooling equipment to utilize the wet bulb depression for lowering air supply air temperature supplied to stacks, (5) water spraying direct on rolls, and (6) improving cooling in general. Remote controls are needed to make it easier to change air applications on newsprint machines, he said.

Richard Durst and U. of Maine associates presented further valuable data on their continuing research into piping, fittings and flow of stock in pipes.

Instrumentation progress in mills is being held back by lack of trained personnel and good maintenance facilities, said Ed J. Kehoe, of Scott's Marinette, Wis., mill. J. R. Upson of Union prepared a paper on coordinating of instrument engineering with operations.

Kimberly-Clark's Keith Martiny said a well-run mill should set up lubrication and preventive maintenance procedures, have interchangeable parts on hand, plan a repairing program in advance of need, and analyze delays and "design them out of the machine."

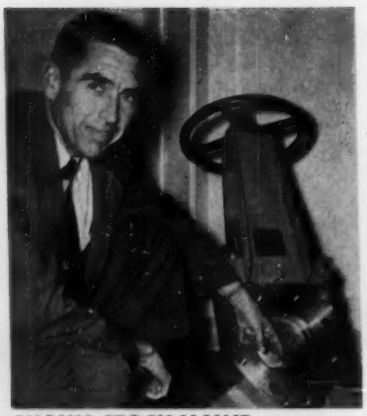
Engineers Meeting is Big; Next Year it Goes to Texas

Next Engineering Conference—the 10th—will be held at the first city in South to go over 1,000,000 population—fast-growing Houston, Texas, last week of October.

There was some sentiment for Chattanooga, Tenn., near the new Bowaters mill, but it lost.

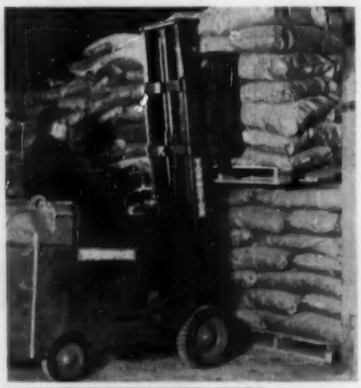
Advocates of a conference on the Pacific Coast still can't win support from strong elements in the old guard of this biggest Tappi division. It has never met west of Chicago.

The Engineers drew over 550 at Philadelphia, and the proportion of mill men totals more than have ever attended any meeting outside New York, except the Canadian sessions in Montreal and a Superintendents national in Portland, Ore., in 1951.



SHOWS STOCK VALVE
JOHN B. CHANDLER, Sales Engineer, Hank D. Jones Co., Atlantic Beach, Fla., shows tight closing feature of their Ferguson Stock Valve, for handling paper stock and slurries.

A NEW SAFETY IDEA
Automatic threading system for paper stack calenders is demonstrated at Engineering Conf. by N. W. PINKHAM, Assist. Supervising Eng., The Travelers Ins. Co. Device was developed by the Travelers Engineering and Loss Control Div. It takes over job that brings fingers and hands too close to rollers.



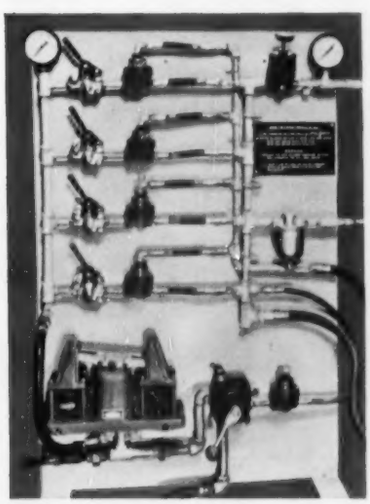
PHILLY DELEGATES HEAR LIFT TRUCKS ARE VERSATILE
Towmotor lift truck setting palletized starch bags, one load above another. At Engineering Conference, a Towmotor spokesman told of surprising number of things a lift truck can do, sometimes with a little re-design.

Another Example of Camachine Engineering For Better Rolls at Lower Cost

New Model 2C-PT Pneumatic Tension

more sensitive...

more selective...



The primary control valve provides a consistently accurate ratio of brake pressure to dancer roll position, varying from zero to an adjustable top limit. The output of the primary valve is multiplied or divided by selective connection to one of the four secondary regulators, providing tension ranges to suit different grades of stock.

more accurate tension!

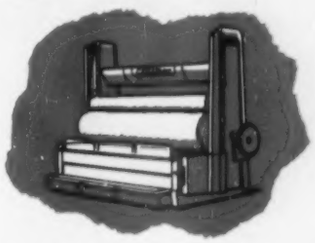
ON ACTUAL INSTALLATION TESTS the pneumatically operated 2C-PT tension has proved more sensitive and accurate assuring optimum control for rewound roll quality.

FOR EXAMPLE: running light tablet stock from a mill roll 40" in diameter and 120" wide at 3000 fpm, the new 2C-PT maintained tension at ½ pound per inch. Changing over to heavier book stock, under the same conditions, the 2C-PT automatically corrected and maintained tension at 1 pound per inch. To accommodate this change in stock only one simple adjustment was required—an increase in dancer roll diaphragm pressure. Still heavier stocks were handled by similar pressure adjustment together with the selection of correct tension among the eight ranges available.

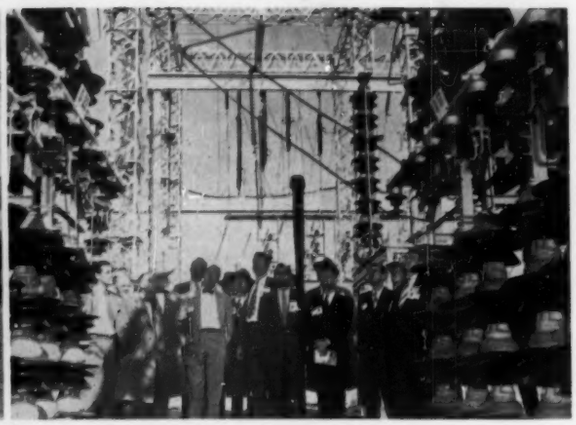
IMPROVED DESIGN: the low-inertia, low-friction dancer roll provides automatic slack take-up every half revolution when running eccentric parent rolls, and its cushioning arrangement greatly reduces the danger of snap-offs. The 2C-PT has provisions for varying the tension during a run, and will automatically retard the mill roll with the winder when slowing down for a splice, thereby avoiding off-set. The threading of the web in the 2C-PT, using a three roll wrap (two fixed idlers and a dancer roll), dampens sheet flutter due to windage, out-of-round parent rolls, or soft sheet edges . . . providing optimum web control for clean-cut, straight-sided rewound rolls.

This new Camachine engineering development can be adapted to serve most mill-type winders in use today. Write for information.

Don't wind up with less than a Camachine®



CAMERON MACHINE COMPANY • 61 Poplar Street • Brooklyn 1, N. Y.



SOME SIGHTS SEEN ON GENERAL ELECTRIC TOUR

M. J. OSBORNE, chairman of Electrical Engineering Committee, in article for PULP & PAPER appearing in this issue, said it was unfortunate the General Electric and Westinghouse tours were at same time, so Philadelphia delegates could not make both tours. Here is what a sizable crowd of delegates saw at General Electric's Philadelphia Switchgear Dept. and Testing Laboratory:
Left—Demonstration showing effect of magnetic forces on bus bars not having adequate mechanical bracing.
Right—View of outdoor capacitator bank at General Electric High Voltage Testing Laboratory.

Scott Mill Tour Awes Engineers

● Scott Paper Co. threw open the doors of its "mother mill"—Chester, Pa.—to touring delegates from the Philadelphia Engineering Conference.

After seeing this 10-machine, 700 tons-a-day tissue-toweling mill, several leading industry engineers were asked their impressions by PULP & PAPER. Most popular answers praised:

1. The good housekeeping. 2. The efficient high production tempo. 3. The unusual advanced designs of machines.

R. C. Mateer, told the engineers, there are two keys to Scott success:

1. A quality concept built up in its organization, resulting in high quality at reasonable cost.

2. A staff and personnel which have achieved more production on machines than the machine builders ever visualized.

Visitors got a chuckle out of the program handed them which listed scheduled events broken down into a minute by minute account.

TALKED ABOUT DRYER BEARINGS AND CALENDER ROLL COOLING

LARRY A. MOORE (left), Black-Clawson Sales Engineer, and LESLIE G. JANETT, J. O. Ross Engineering Vice President.

One fellow said, "That's the way they operate."

Chester plant personnel numbers about 1800, staff about 800. The former work on an incentive program, and the production tempo was impressive.

Some engineers expressed amazement at the open headbox of imposing height on No. 16 machine. One of the "different" things was that the Fourdrinier section had no shake to it. This same machine had a web break and those who crowded around got a kick out of the speed with which machinetenders whipped the web from one section to another with short sticks.

Greatest attention was directed towards the Flying Scott, No. 17 machine, which according to the company, operates well over 2,000 fpm. Here the engineers saw the circulating pump and pipes which flow stock directly onto the wire without a headbox. One engineer remarked he had never seen such a large vacuum pump.

In the shipping department, the main case conveyor from the mill snakes past an 8-position truck loading dock and in front of 16 freight car loading stations. Automatic case selectors, developed by Scott engineers, select desired cases from the main conveyor and automatically deliver them into the freight cars or trucks, where they are loaded manually. These selectors work on the electric eye principle. They are pre-set to select a certain type of case. Each Scott product is packaged in its own special carton of individual design and the automatic selectors select the carton according to the position of a blue marking line on the carton.

For years piped music has been used in this mill, for better employe working conditions.

After the tour, PULP & PAPER asked several engineers their impressions. Without exception, they all mentioned the good housekeeping, the terrific production tempo of the workers and the advanced designs on the machines.

It Was Eventful Fall For Ward Harrison

It was an eventful autumn for Ward Harrison, v. p. for production, Riegel Paper Corp., Milford, N.J.:

1. Honored as toastmaster, Engineering Conference luncheon at Philadelphia.

2. Named a "Papermaker of the Month" in Noble & Wood's *Agitator*, bimonthly magazine.

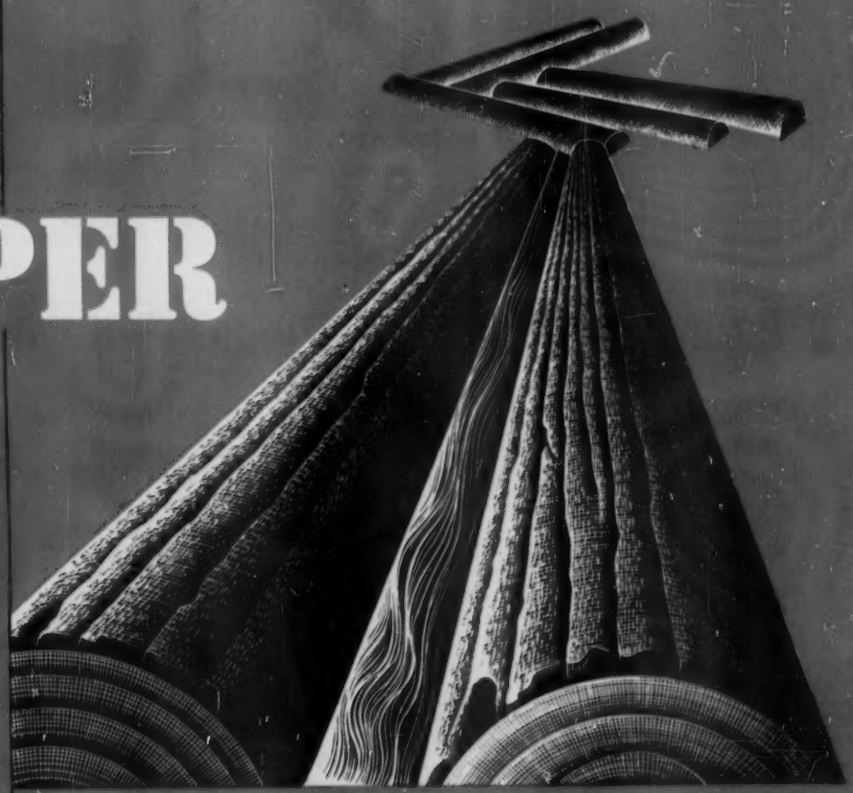
3. Trapped by Hurricane Hazel into a patch of poison ivy near his Jersey home.

But Mr. Harrison was happy. Even though the poison affected his eyes as well as face and hands, from trying to move a fallen tree, he had good news from Riegel's big kraft mill. Although right in the path of Hazel near Wilmington, N.C., the mill made over 300 tons the day of the big blow, and there was no damage. The shopping center at Riegelville suffered some window blowouts.

The *Agitator* notes that Mr. Harrison was born at Blue Earth, Minn., earned two degrees at Iowa State and a ph.d. at the Paper Institute in 1936. He first joined Riegel then, and his entire career has been with that company except for short interludes at Camas, Wash., and Pisgah Forest, N.C., mills. He holds patents on cigaret papermaking and has done much work in bleaching and semi-chemical pulping, and directed design, construction and staffing of the Riegel Carolina mill.

WOOD PULP

PAPER



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BULKLEY, DUNTON PULP CO., INC.
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and STORRS & BEMENT COMPANY

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Offices and representatives in 60 cities
in the United States, Europe, Latin America, Africa, and Asia

VISITORS SEE NEPCO'S PINE PLANTATION

Outstanding in Midwest is forest job Nekoosa-Edwards has done. At left is REED O. HUNT, Crown Z's Vice Pres. in charge of Mfg. Pointing to right is F. G. KILP, Nepco Woodlands Mgr. To his right are: JIM RITCHIE, Exec. Director, USPPA; LYALL C. STILP, General Purchasing Agent for Kimberly-Clark; RAY F. BOWER, Hammermill Paper Co., and MACE HARRIS, Mfg. Vice Pres., The Northwest Paper Co. IN PICTURE AT RIGHT, W. F. BOWLD, Vice Pres. and Gen. Mgr., Buckeye Cellulose, (at left), is looking at an experimenting planting bed. MR. STILP is at right.
(W. J. BROWN, Forest Economist, Kimberly-Clark Corp., took these pictures.)

Everest Arithmetic Places Pulp in Perspective

No clouds ahead for market woodpulp, U.S. Producers agree; but Marathon Chairman calls for new incentives

● There were few clouds overhead for the U. S. Pulp Producers Association's annual fall meeting, held this year at a Three Lakes, Wis., resort, after a 3-day tour of Wisconsin River Valley mills and pulpwood plantations. And the 60 executives and associates who took part also saw no clouds overhead as far as the market woodpulp business is concerned. All were cheerful—for the rest of the world is now taking one-third more U. S. market pulp than it did in 1953, and the U. S. domestic supply is ample and demand is only slightly under the 1953 level.

Clark Everest, chairman of Marathon Corp., made the final principal address, readily admitting that he is "still the perennial optimist that some of you have labeled me." But he warned that "new incentives must be found," now that war and defense demands are fulfilled and foreign aid and government expenditures probably will diminish, in order to keep up rate of growth in per capita consumption of pulp and paper. He said population growth still will increase consumption, but since 1945 only one-fourth of increased paper use was due to population growth, the rest was due to per capita increases.

The "best brains" will be required to plan expansions, he warned, adding: "We must be mighty careful in separating what we term the short and long range effect—we can get awfully tired waiting for a long range effect."

D. C. EVEREST— "We can get awfully tired waiting for a long range effect."

Other Everestian epigrams:

"We used to be concerned about pulp imports from Europe. In their peak year, these imports were only ⅛th of the new domestic capacity installed since World War II (a 10,000,000-ton increase, now totals 22,000,000). This arithmetic may help to place in proper perspective the significance of this growth."

"Per capita consumption abroad is still less than it was prewar. Potentialities of growth are relatively greater abroad than home. Foreign markets undoubtedly will absorb more of our products in the future."

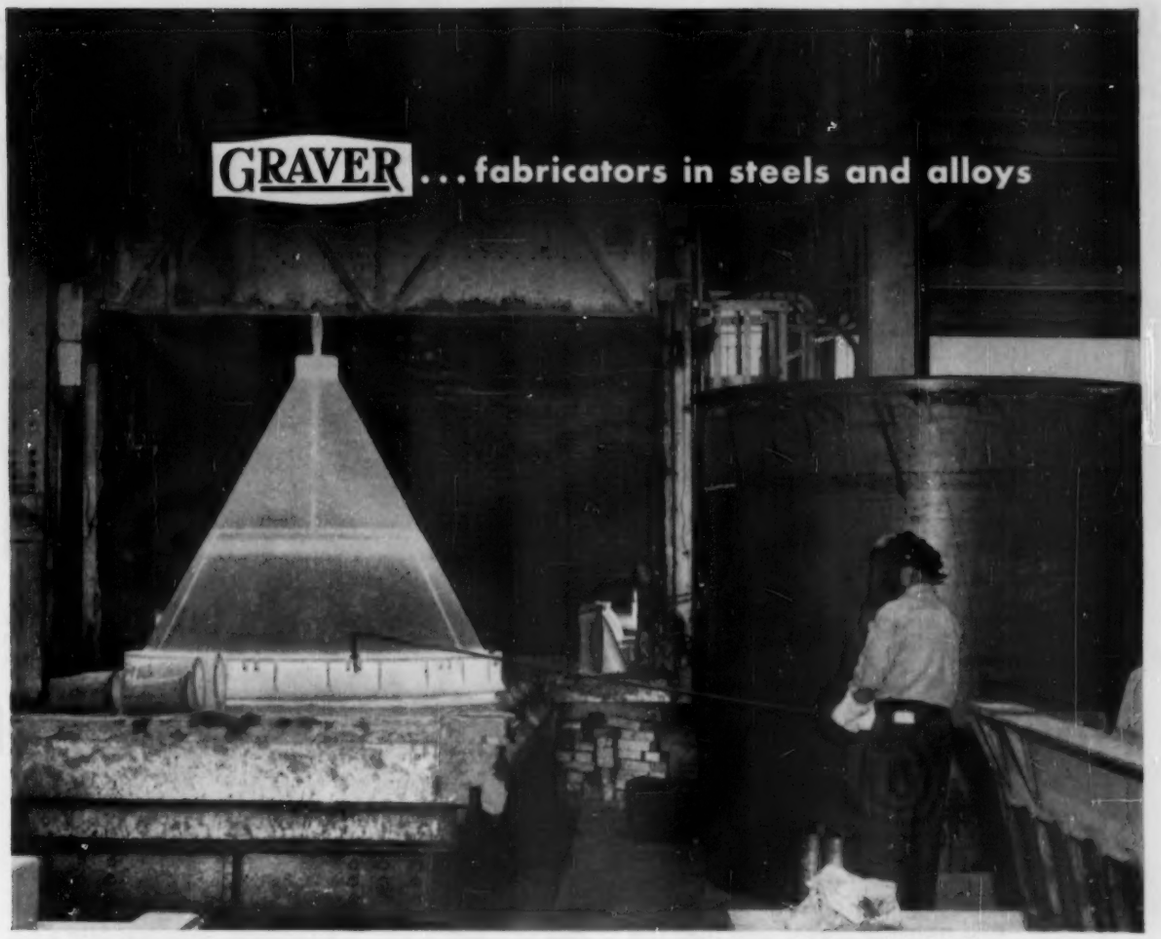
"If furnish ratios (woodpulp v-a-v waste paper) stayed where they were in 1946 he would be consuming 2,172,000 tons less woodpulp today. As supply of recoverable waste increases in relation to demand, an ancillary expansion cycle could at some point begin. To the extent waste paper from improved pulp is economically recoverable, the relatively more favorable increase in use of woodpulp will not continue long at the postwar rate." (Woodpulp was 65.6% of furnish last year; only 58% in 1946).

U. S. and Canadian pulp expansion has "eliminated fear of shortages in North America, reduced U. S. dependence on overseas fiber, guaranteed long range continental self-sufficiency and furthered national security."

"The 10,000,000-ton U. S. capacity increase since W. W. II is more than Canada produced in its best year and 50% more than the entire Scandinavian industry produced in its best postwar year."

WHAT KIND OF MILL HE WOULD BUILD—"As to the type of pulp mill I would build, it would be difficult to determine whether it would operate on soft or hardwoods, or a percentage of each. What would likely be an idea plan at this time may be

Continued on page 132



Buckeye Digesters Set New Standards

For the new $25 million plant of Buckeye Cellulose Corporation, subsidiary of Procter and Gamble, Graver has precision-fabricated nine huge digesters that represent the ultimate in fine craftsmanship.

These vessels are equipped with 3/8″ solid stainless strainers, one of which is pictured above, measuring approximately 7′ in diameter and 7′ in height. Each of these cones contains some 30,000 *individually drilled* holes.

The entire construction of these digesters goes beyond ASME Code requirements. Besides the customary pressure testing, every vessel was X-rayed twice. In addition, all welds were spot-checked by grinding successive weld layers and testing for any possible fissuring too small to be revealed by X-ray.

Another unusual and interesting feature is how Graver and Buckeye engineers together checked and recorded the location and thickness of every carbon steel and stainless steel plate. Thus, at a later date these digesters can be inspected and the amount of corrosion and wear determined for future guidance.

ONE OF NINE DIGESTERS
on its way to Foley, Florida, site of the great new plant of the Buckeye Cellulose Corporation

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA

CHICAGO • NEW YORK • PHILADELPHIA • EDGE MOOR, DEL. • ATLANTA • CATASAUQUA, PA. • PITTSBURGH • CLEVELAND • DETROIT
TULSA • SAND SPRINGS, OKLA. • HOUSTON • ODESSA, TEXAS • CASPER, WYO. • LOS ANGELES • FONTANA, CAL. • SAN FRANCISCO

PULP & PAPER'S OWN FIELD-WRITTEN STORY OF NEW BUCKEYE MILL—

INCLUDING PULP & PAPER'S OWN EXCLUSIVE PICTURES

(This is Procter & Gamble trademark)

P & G PRESIDENT

NEIL H. McELROY, President of Procter & Gamble Co.

P & G CHAIRMAN

RICHARD REDWOOD DEUPREE, Chairman of the Board, Procter & Gamble Co.

MANAGES BUCKEYE

W. F. BOWLD, Vice Pres. and Gen. Mgr. of Buckeye Cellulose Corp., P & G subsidiary.

SELLS BUCKEYE PULP

C. B. METZ, Sales Mgr. for Foley woodpulps as well as Memphis linters pulps made by Buckeye. ("BUKIPULP")

How the Men of Buckeye Successfully Built

The Men Behind the Florida Mill

Directors and officers who made decisions—engineers and technical men drawn from P & G pool of experts

● The directors of the parent company, Procter & Gamble, are the men who made the far-reaching decisions to go into the woodpulp market.

REUBEN B. ROBERTSON JR., president of Champion Paper & Fibre Co., who is president of Champion Paper & Fibre Co. and—if all goes according to present plans—the next president of the American Paper & Pulp Assn. (1956)—is a director of P & G. He is first v.p. of APPA.

Officers of P & G, who also are directors are:

RICHARD R. DEUPREE, chairman; **NEIL H. McELROY** president; **WALTER L. LINGLE JR.**, and **HOWARD J. MORGENS**, executive vice presidents; **RENTON K. BRODIE**, administrative vice president; **HARVEY C. KNOWLES**, vice pres., purchases; **J. GIBSON PLEASANTS**, vice pres., research and development; **THOMAS J. WOOD**, vice pres., sales.

KELLY Y. SIDDALL, vice pres., comptroller; **SAMUEL BENEDICT**, secretary, and **GEO. S. WOODWARD JR.**, treasurer, are not directors.

Other directors are: **FLOYD M. BARNES, HARRY E. COOMBE, FRANK F. DINSMORE, CHAS. W. DUPUIS, CECIL H. GAMBLE, FREDERICK V. GEIER, REUBEN B. ROBERTSON JR., RALPH F. ROGAN, JOHN J. ROWE** and **THOMAS J. WOOD.**

APPA LEADER ON P & G BOARD

REUBEN B. ROBERTSON JR., Pres. of Champion Paper & Fibre Co., is a Director of P & G. He is slated to become Pres. of American Paper & Pulp Assn. in 1956, is now its First V.P.

THE MEN WHO BUILT AND OPERATE NEW MILL.—Unusual sidelight on the new Buckeye mill in Florida is the background of men of Procter & Gamble who created it and who run it. These men were drawn from a great P & G reservoir of management men, engineers, technicians, etc.

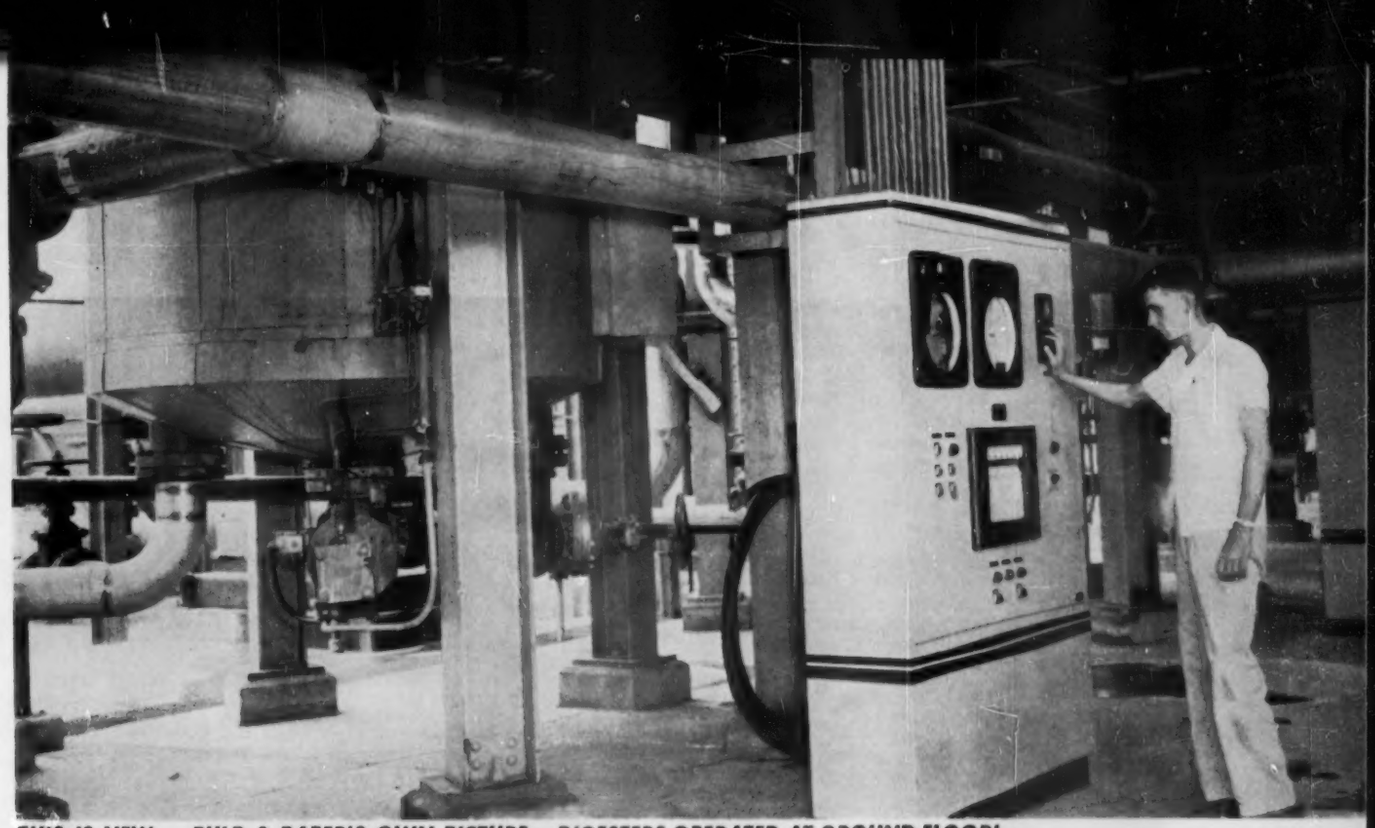
Today, some of these have moved on to other P & G assignments, perhaps a cottonseed oil mill, a soap operation, etc., completely unrelated to pulp and paper. Many—before Foley—had no previous experience in building a woodpulp mill. But P & G cellulose technicians have a rich background—30 years of research and manufacturing in its Memphis cotton linters cellulose plant. A wood cellulose pilot plant, complete in all detail, was built at Memphis before the Foley ground was broken.

In building this new mill, P & G was able to draw upon its own specialists in such matters as foundations, piping, stainless steel and alloys, instrumentation, air handling, etc. It has a great engineering and research center in Ivorydale, a community in Cincinnati outskirts named for its most famous product—Ivory soap—where PULP & PAPER editors met several men working on the Foley project.

Continued on page 82

HEADS UP FLORIDA STAFF

P. K. HONEY, Res. Mgr. of Florida operations of Buckeye Cellulose Corp.



THIS IS NEW— PULP & PAPER'S OWN PICTURE—DIGESTERS OPERATED AT GROUND FLOOR!
PULP & PAPER picture of what is believed first mill operating digesters from ground level. Honeywell panels for each of 9 Graver Tank & Mfg. stainless-clad digesters—top panel for digester and vapor space pressure, lower part for temp. recording. Note bottom of digester with Yarnall-Waring automatic blow valve; pipe leading to heat exchanger.

a Pulp Mill on New Principles

Here is What They Did at Foley

Procter & Gamble technicians and engineers had their own ideas and made them work at new pulp operation

• Production of high quality cellulose pulp was effected at midyear by Buckeye Cellulose Corp., Foley, Fla., in a mill that has attracted wide attention because of its use of the new pre-hydralized sulfate process and the nature of its construction.

The mill is replete with instrument controls, and processing through its array of modern equipment from top flight suppliers is subjected to intensive laboratory and mechanical safeguards to insure attainment of a highest quality pulp.

The first impact on the visitor at Foley is that a high proportion of the mill facilities are either partially or wholly unenclosed. Placing of the digester operating floor at ground level in marked divergence from conventional pulp mill practice heightens the effect.

Occupying four corners of two intersecting site fairways or accessways, the plant is compact, and with arrangement permitting its being doubled in size without difficulty in spacing.

Woodyard logistics are based upon a daily consumption of 750 cords with maximum storage time not to exceed 30 days, a program designed to bring fresh and even quality wood into the mill. The horizontal pulpwood conveyor is 400 ft. long, divided into two sections with the first delivery to that nearest the barker. Conveyor aprons are of conventional railroad iron type reinforcing to sustain heavy blows. The bottom, however, has extra width to permit use of two parallel extra heavy "H" type Link-Belt chains for moving the wood. Spaced water jets dislodge sand on the wood, and the accumulated water contributed to ease of wood movement. This type of installation is expected to result in low maintenance costs.

Pulpwood received by rail or truck is unloaded with two Manitowoc Speedcranes, powered by Caterpillar diesel motors. One crane handles wood from rail or reserve with an Owen orange peel type pulpwood grapple. The other uses slings passed around the ends of the wood, lifting an entire truck load in one lift.

Barking is effected by two parallel 40 cord/hour Fibre Making Processes drums which discharge to a pair of 5-ft. wide sorting belts spanning the open-sided building. Here occurs the first positive step in quality control.

An operator standing in a waist-deep recess at each belt turns each pulpwood piece over to leave defects or unbarked spots upward. Pieces inadequately barked are returned by conveyor for rebarking. Pieces having "cat faces" or other undesirable wood that may degrade ultimate product are pulled off and fed to a hog, ultimately reaching the bark burning boiler, via the bark crusher. An adjacent splitter is convenient for use.

Ample chipping capacity is provided by two Carthage chippers, each driven by a 700 hp synchronous Westinghouse motor. One chipper is a 12-knife unit; the other a 10-knife.

Quality control standards are also imposed at the four Orville-Simpson Rotex screen equipped screening room. Chips only of ¾ in. size are accepted, those rejected as over or under, and slivers, go to the bark hog, thence to the boiler. No rechipper is installed.

Accepted chips go to two large Stebbins tile silos. Chips are fed in at the top and drawn from the bottom for digester use. There is no direct feed from chipper and screens to the digesters.

DIGESTERS OPERATED FROM GROUND—Operating control of the

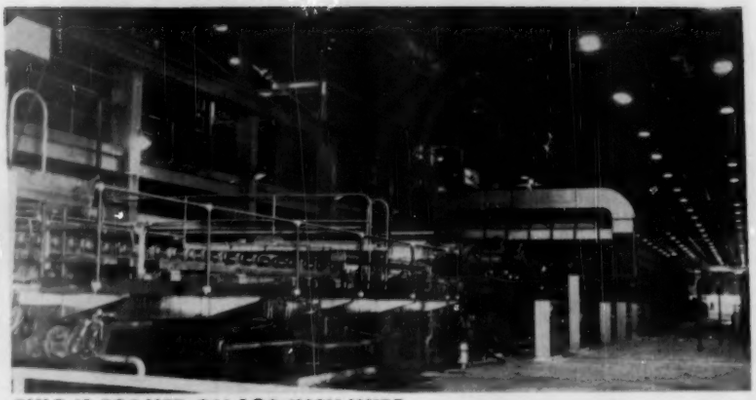
nine Graver Tank & Mfg. digesters is placed on the ground level, with signal control for chip feeding. Each of the digesters is of 10-ton finished pulp capacity. They are equipped with Honeywell instruments for control, automatic Yarnall-Waring automatic blow valves, and Whitlock heat exchangers.

The Foley mill is the first mill in the Western hemisphere to acknowledge making dissolving pulp from pine by the pre-hydralized sulfate process (a two-stage cook), a method adopted by the company as best for producing a pulp of particular performance characteristics desirable for specific end-usages.

Three main types of cellulose pulp are to be produced at Foley, each one subject to customer specifications. These are: (1) viscose grade, for use principally in tire cords, textiles, and cellophane; (2) acetate grade, for plastics and film; and (3) paper grade, for manufacture of fine quality paper.

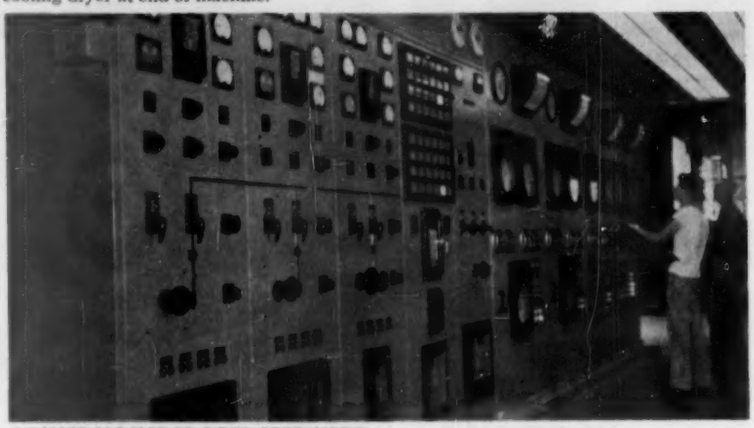
Cooking of chips under exacting temperature control is effected in two stages, the first for removal of sugar, and the second (lasting two to three hours) for release of fibers from the lignin. Each digester is fitted with a Whitlock heat exchanger and the liquor is circulated through the digester and exchanger until desired temperature is attained. After that, automatic controls maintain the constant temperature level. Temperature recordings on each cook are kept by a Honeywell instrument.

Quality control is maintained on the digester floor where a chemist performs titrations that result in on-the-spot adjustments of processing, if needed.



PULP IS FORMED ON 180 INCH WIRE

Here's where "BUKIPULP" becomes a reality—on Sandy Hill Fourdrinier. Ross Engineering Corp. provided the machine hood and auxiliary air systems with new pulp cooling dryer at end of machine.



POWER HOUSE IS OPERATED HERE

One of sectional instrument control panels on power operating deck. Far right—Bailey controls for Combustion Engineering recovery boiler. Nearer sections show Foxboro evaporator control; Honeywell vacuum and white liquor instruments.

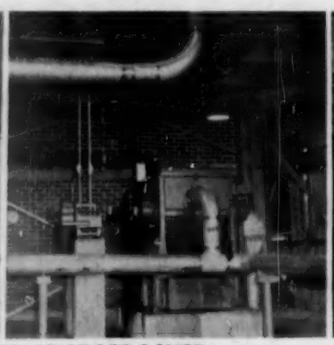
WASHING AND BLEACHING—The mill extends from east to west, and just west of the unenclosed digesters (there is no "digester house") is an open area occupied by the black liquor system, including surge tanks for evaporator operation. All tanks, evaporators, etc., are protected by Earl Paint Co. "Erkote" mastic.

The washer-screening building measures 82 by 44 ft., and the top floor containing the 11½ by 14 ft. stainless steel 3-stage counter-current Improved Machinery washer is totally enclosed. The adjoining bleach plant. 127 by 72 ft., has its operating and washer floor only enclosed. These two enclosed areas are served with 70,000 cu. ft. per min. of filtered air, providing a positive inside pressure that prevents entrance of outside dust-laden air. This is one of the quality control measures.

Regulation of the brown stock washer is with Foxboro instrument control. After washing, the next treat-

BROWN STOCK IS WASHED

Impco equipment does job in 3 stages. Foxboro panel at right.



SCREEN IS SPACE SAVER

Bird Vibrotor, one of 9 similar pulp stock screens at Foley.

SENDS STOCK TO MACHINE

DeZurik constant level regular valve with Buffalo 9600 gpm fan pump.

P & P'S OWN PHOTO WHERE "BUKIPULP" IS BLEACHED

Installations on both side of open center aisle for Sandy Hill Kamyr continuous process. Washers are in Stebbins tiled vats.

The multi-stage process requires a half day, and pin-point control is maintained with hourly samples sent by pneumatic tube to lab.

ment is with five Bird Machine Co. "Vibrotor" screens, of which three are primary and two secondary. (9 Bird vibrotor in all, in this mill, are equipped with 012 in. cut slotted plates). A third stage, a Bird flat screen, finally separates all shives and other waste material ejected to a Dempster Bros. disposal unit placed outside the building. An Improved Machinery valveless decker increases consistency before the pulp is sent to a chest preparatory to bleaching.

Bird also supplied 4 Jonsson de-Knotter screens.

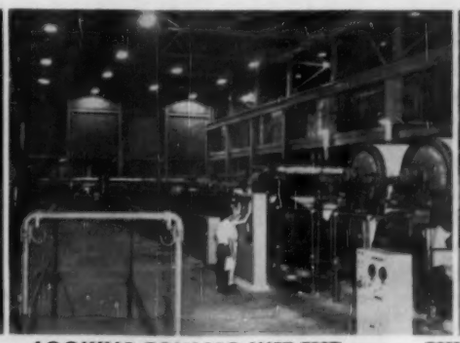
The multi-stage Sandy Hill Iron & Brass Works bleach plant is operated basically on the Kamyr continuous process. Pin-point control is maintained over this operation with hourly samples sent by pneumatic tube to the main laboratory for analysis. This analysis procedure requires about 30 min., enabling the keeping of a "trend" chart on the bleaching process (itself requiring a half day in continuous cycle), leading to ultimate uniformity in four 75-ton (at 4¾% consistency (Stebbins tiled blending tanks. These tanks are outdoors, occupying space between the bleach plant and machine building. Additional space is taken up there by two 23-ton machine stock Stebbins tiled chests. Bleach plant washers are in Stebbins tile vats, and tower linings also have Stebbins linings. Because of exacting quality standards, tile linings are found throughout the mill, all by Stebbins.

The mill installations required 16,000 ft. of stainless steel piping, 82,000 ft. of copper tubing, and quantities of Saran-lined, rubber-lined, and lead-lined piping.

Backing the customary checking points, at various production stages, is a segmented main laboratory with 22 chemists and technicians handling routine quality analyses and performing product testing. No shipments are made until samples of each roll are checked against customer specifications to assure conformance with desired end-use. A secondary laboratory is located in the bleach plant where a chemist performs routine titrations; another in the machine room. This checking operation has been part of the process at the company's Memphis (Tenn.) cotton linters pulp mill for 30 years.

WHERE PULP IS FORMED—The pulp machine building measures 654 by 128 ft., not including the machine stock chests already mentioned, and

WHERE STOCK FLOWS
This is Sandy Hill Bertram flow distributor and pressure headbox.



LOOKING TOWARD WET END
Interesting press section for Sandy Hill 180 in. machine at Foley.

SHIPPING COSTS REDUCED
Washington Iron Works made 1600 ton hydraulic baling press.

Industry's largest

PULP BALING PRESS

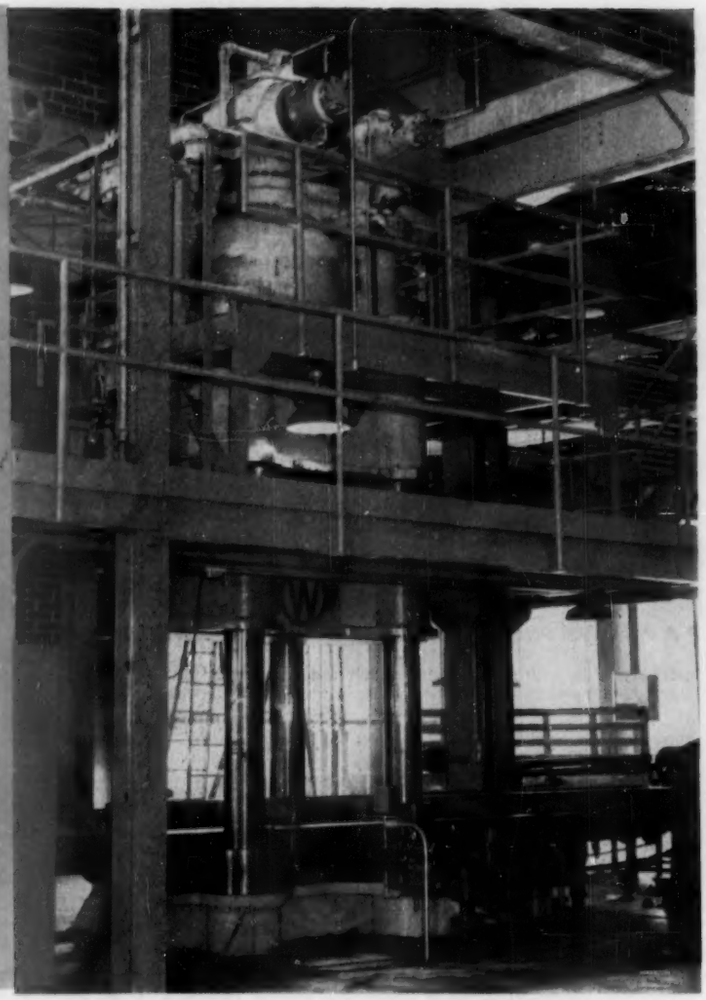
At new plant of

Buckeye Cellulose Corp.,

Foley, Florida

—is a 1,600-ton Washington rapid traverse press

—handles 168-hour production in 120 hours



The high speed, Washington pulp baling press now in operation at the Buckeye Cellulose Corporation's 300-ton sulphate mill at Foley, Florida, is the largest pulp baling press in the industry.

Engineered for maximum production and minimum finishing room costs, the Washington press bales in 120 hours the entire weekly production of the new mill. The press is operated on the basis of two 8-hour shifts per day while the plant operates around the clock.

Up to four pulp stacks are handled per cycle. Time for a complete operating cycle is only 15 seconds, exclusive of the necessary "dwell" time required on some grades. Effective working platen area is 37" x 85" between columns, with 65½" daylight opening and 38" stroke. Maximum hydraulic working pressure at full tonnage is 2,500 psi.

Washington rapid traverse pulp baling presses have been chosen by many other recently constructed or newly equipped pulp mills throughout the North American continent, as listed at the right. In every instance they are more than paying for themselves in added production and reduced operating expenses.

Your inquiry for standard presses ranging from 600 to 1,600 tons, or for special designs and accessories, will bring full information promptly.

OTHER WASHINGTON PULP BALING PRESS USERS:

SCOTT PAPER CO.,
Everett, Wash.

WEYERHAEUSER TIMBER CO.,
Everett, Wash.

RAYONIER, INC.,
Hoquiam, Wash.

RAYONIER, INC.,
Port Angeles, Wash.

RAYONIER, INC.,
Jesup, Georgia

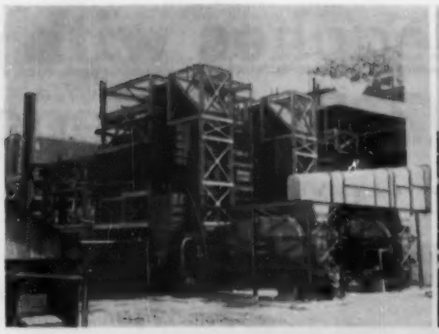
BOWATERS SOUTHERN PAPER CORP.,
Calhoun, Tenn.

EAST TEXAS PULP & PAPER CO.,
Evadale, Texas

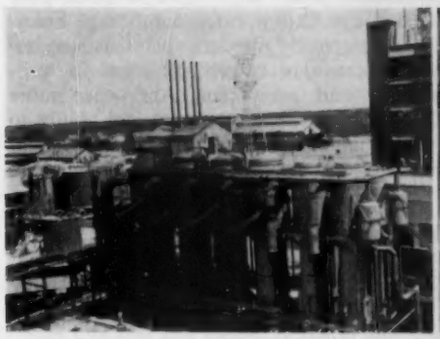
KETCHIKAN PULP CO.,
Ketchikan, Alaska

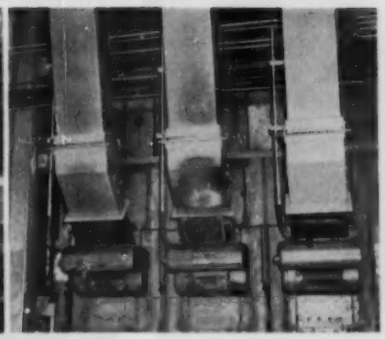
1500 6th Ave. South, Seattle 4, Wash. *Since-1882* ELliott 1292

WASHINGTON IRON WORKS

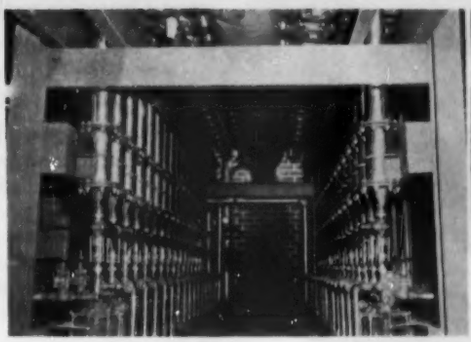


BUCKEYE'S POWER
(Left) Two 175,000 lbs./hr. Babcock & Wilcox power boilers, open type. (Right) Three General Electric turbogenerators are enclosed in individual housings instead of a big enclosed room.





OUTSIDE AND IN
(Left) Conkey type evaporators, out in open, are protected with Earl Paint Co. mastic coating. (Right) Combustion Engineering boilers are operated here on floor of recovery plant.



CLEANING AND CHIPPING
(Left) Dirt particles that may have crept in are removed from pulp ahead of Foley machine with Nichols Vortraps. (Right) 12-knife chipper is one of two Carthage chippers at Foley. Other has 10 knives.

houses stock preparation, pulp roll storage rack, finishing and shipping room. Also accommodated is the main laboratory and other accessory services. There is no partition between machine and roll storage, converting, or chipping. There is only a partial wall between shipping room and shipping platform. All major structures and installations rest upon steel pilings, driven to an average depth of 55 ft. but with a 154 ft. maximum depth.

Pulp preparation for the machine includes passing through an installation of Nichols Vortraps for removal of dirt, and through a DeZurik consistency regulator to an Improved Machinery, Inc., valveless decker. E. D. Jones & Sons Co. supplied two high speed Jones refiners, and six Jones Royal jordans, four of which are Accru-Set, and two are hand-wheel adjusted. Jones supplied two large Liebecks for broke disintegration.

Stock is supplied to the machine by a Buffalo 9600 gpm (575 rpm) fan pump through a DeZurik constant level head box control valve regulator.

It reaches the 180 in. wide wire on the Sandy Hill Iron & Brass Works Fourdrinier through a Bertram flow distributor and pressure head box. The Fourdrinier is removable. After passing over two suction rolls, the sheet is carried through a 4-dryer roll section and then to the second and third presses. There are 65 dryer rolls. The machine drive was furnished by Sandy Hill, and is driven by a single Westinghouse motor.

Ross Engineering Corp. supplied hood and auxiliary air systems with a new pulp air dryer at end of the machine. Machine instrumentation is by Mason-Neilan Regulator Co. Instrument control for the DeZurik regulator valve is in a panel on the operating side of the machine. Lodding doctors are used. Bird Machine supplied two Vickery felt conditioners. The finished sheet is handled by a Lambs Gray Harbor automatic finishing layout with its cutting, stacking and transport equipment effectively interrelated with contact switch and push-button operation. A 1600 ton Washington Iron Works baling press is an important integral part of the layout.

Completed 10-ton rolls are placed in the rack with a Manning, Maxwell & Moore overhead crane. Shipment is in either rolls or package form according to customer preference. If in packaged form, the roll is converted to sheets by a layboy and then put through a 1600 ton hydraulic pulp baling press, and then wrapped and wire-bound.

CHEMICAL MAKEUP, RECOVERIES, POWER—Four artesian wells drilled to about 200 ft. furnish 26,000,000 gal. of water per day to the mill. This is put through a 115 ft. diameter Dorrco cold lime water

Buckeye bleaches with a modern Sandy Hill Kamyr Bleach System

ANOTHER important chapter in the history of paper making in America is written with the opening of the new 25 million dollar high-alpha cellulose pulp mill of The Buckeye Cellulose Corporation at Foley, Florida. This completely modern plant is an impressive representative of current advances in techniques, methods and equipment. And once more Sandy Hill is proud of its opportunity and ability to cooperate with management and planners in the creation of a plant that symbolizes the highest degree of industrial progress.

The adoption of the Sandy Hill Kamyr Bleach System at Buckeye is another step in a trend that is rapidly becoming standard procedure. With steadily increasing frequency, more and more progressive mills are installing this practical, highly efficient and economical bleaching method.

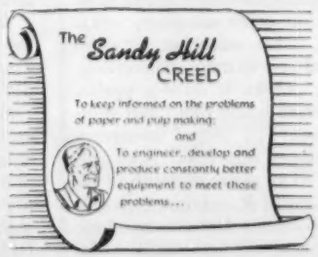
At Buckeye, the Sandy Hill Kamyr Bleaching System is used to bleach high-alpha pulp to an unusual degree of brightness and purity.

The revolutionary Kamyr principles, including continuous multiple stage operation, thorough mixing and absorption of chemicals, induced strong horizontal circulation through the tangential connection of pumps, and separate washings after every treatment, are now accepted as the most effective, most dependable means for producing increased yield of more uniform pulp of higher alpha content.

By every count, the Kamyr Bleaching System produces *more* pulp, *better* pulp, *whiter* pulp, *more uniform* pulp.

ELEMENTS OF SANDY HILL KAMYR BLEACH SYSTEM SUCH AS INSTALLED AT BUCKEYE

Illustration at top shows bleached pulp receiving final washing on Kamyr Vacuum Washer. Other pictures, in order, are dilution nozzles and circulation, feed, transport and tangential pumps, all contributing to the high efficiency of the Kamyr Bleach System.


The Sandy Hill CREED
To keep informed on the problems of paper and pulp making;
and
To engineer, develop and produce constantly better equipment to meet those problems....

Buckeye produces with a modern Sandy Hill Paper Machine

THE SANDY HILL FOURDRINIER paper machine at Buckeye is ultra modern in every detail. In the removable Fourdrinier are found all up-to-date features which contribute to extreme efficiency of sheet forming combined with a simplicity of construction and operation that lends itself to exceptional facility of adjustment.

A multiple manifold Sandy Hill Bertrams Flow Control Unit assures absolute uniformity in the distribution of stock across the wire.

The specially designed Press Section, comprising two suction presses and a smooth press, produces progressive maximum water removal. Four dryers heat the sheet between the first and second presses.

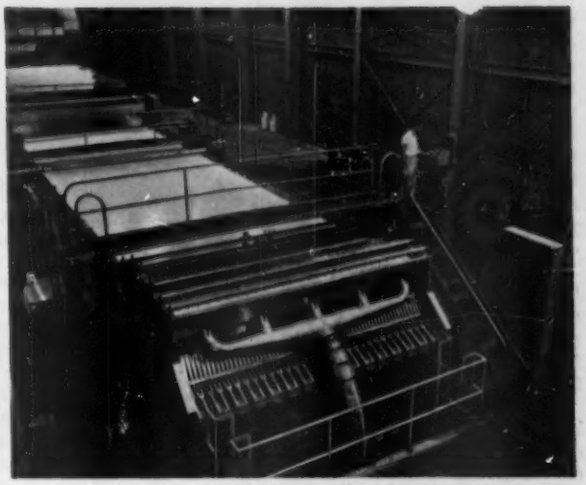
The Sandy Hill Selective Drive embodies the most modern ideas in power transmission and guarantees the machine operator's first requirement—an unvarying draw between sections.

The five foot Dryers are mounted on box type framing in anti-friction bearings. These Dryers are constructed in the latest board machine dryer design which provides maximum convenience in working around the dryer nest.

Ten ton jumbo rolls of pulp are wound on a constant speed drum reel. The rolls, both in starting and final reeling positions, are hydraulically loaded, with provision for pressure adjustment.

The Buckeye Fourdrinier machine incorporates the newest ideas in improved functional design combined with the integrity of construction and faithful consideration of detail that has characterized Sandy Hill equipment for generations.

Sandy Hill engineers are completely at your service in helping you plan new pulp and paper mills or improvements in existing ones.



THE Sandy Hill IRON & BRASS WORKS
HUDSON FALLS, N.Y.

VIEWS OF SANDY HILL EQUIPMENT DESIGNED AND BUILT FOR BUCKEYE

Illustration at top shows Fourdrinier which forms waterleaf sheet from high-alpha cellulose pulp. Following, in order, are first press section, dryer group and constant speed reel.

softener. Storage is in a 125 ft. diameter concrete reservoir, which is covered to prevent entrance of sand or fly ash.

The causticizing plant was provided by Dorr Co., with filters for green and white liquor. Salt cake and lime unloading into storage is effected with Fuller Co. Airveyors.

Black liquor from storage following the washing process is sent through a Chicago Bridge Conkey type sextuple effect evaporator installation, thence through a conventional D. J. Murray Co. Cascade disc evaporator to a Combustion Engineering Superheater Co. 170,000 lb./hr. 675 psi recovery boiler. Standing 146 ft. high this boiler is among the tallest of its type installed by that company. A Cottrell precipitator completes the cycle of chemical recovery.

The recovery boiler is regulated from a central instrument panel, with a Bailey control system. An adjoining panel carries Foxboro and Honeywell instruments, and Honeywell recorder for the evaporator system.

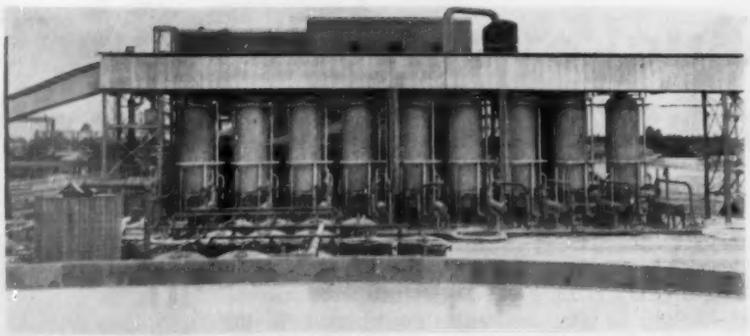
Two 175,000 lb./hr., 600 psi, 720° F. Babcock & Wilcox boilers and one 175,000 lb./hr. bark burning (175M lb./hr. on oil) Babcock & Wilcox boiler complete the steam supply. The power house is 126 ft. high, of open construction.

Only the control floor of the recovery boiler is enclosed, and there is no turbine room. The three General Electric turbo-generators (7500 kw, 6000 kw, and 1500 kw respectively) are enclosed individually, standing out on a flat deck beneath which their condensers are placed. Current is created at 2400 volts, 3-phase, 60 cycles in an ungrounded system.

Allis-Chalmers furnished the high voltage controls, and unit substations. Westinghouse furnished switchgear.

The mill has been provided with a 2,000,000 gal. capacity effluent pond. Discharge is into Fenholloway River, an adjacent stream established by legislative act as "industrial" prior to site acquisition by Buckeye.

Turpentine and tall oil are recovered during the digester operation and will serve as a basis for side products.

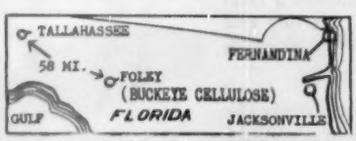


UNUSUAL DIGESTERS AT BUCKEYE
Graver Tank & Mfg. stainless clad digesters—9 in a row—are seen here, with machine building in background.

GENERAL INFORMATION—At Foley, there are 523 mill employes, of which 350 are in production.

The mill was designed by J. E. Sirrine Co., Greenville, S.C., in association with the Procter & Gamble engineering department. Erection was by H. K. Ferguson Co., Cleveland, O., and Duval Engineering and Construction Co., Jacksonville, Fla.

The plant occupies 30 of 54 acres under fence, out of a 1200 acre site.



LOCATION of Buckeye Cellulose mill at Foley, Fla.

Mill layout will permit it being doubled without inconvenience. Construction was started in Feb. 1952, and pulp first produced on June 15, 1954.

Foley is a former sawmill company village. It is six miles from Perry, Taylor County seat, which is at intersections of U. S. Highway routes 19, 27, 98, and Florida state routes. Fishing and hunting are good. Two railroads serve Perry, the nearby larger town.

OUR COVER PICTURE—
This is small replica of our cover picture—one of many of PULP & PAPER's own "first" pictures of this new mill. This shows, l to r—Stebbins tiled chip silos, Fuller Airveyor for salt cake, Combustion Engineering recovery boiler, Conkey type evaporators and machine bdg. Note low level conveyors.

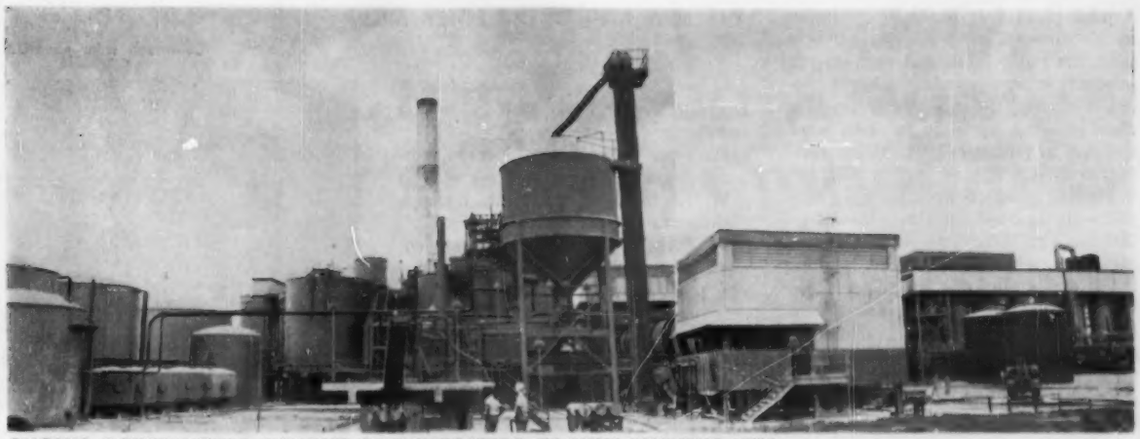
OPEN TYPE CONSTRUCTION OF NEW BUCKEYE CELLULOSE PULP MILL
Aerial view of Buckeye 300-ton dissolving pulp mill at Foley, Fla., showing open type construction. Plant is surrounded by 570,000-acre pine tree farm, most of which lies within a 35-mile radius.

Curious Facts About Buckeye And "BUKIPULPS"

"Buckeye" was chosen as the name of Procter & Gamble's cotton oil and cellulose subsidiaries because P & G is a 117-year old firm in Ohio—the Buckeye state.

Cotton oil led to linters pulp for Buckeye. Linters pulp business led to wood-pulp because wood fiber is more plentiful, its markets more stable, and wood now can be made into highest quality pulps.

Buckeye is the name of a tree species which was common in Ohio. So now "BUKIPULP," trade name for Buckeye pulps, is more fitting than ever—applying as it does to pulp made from trees.

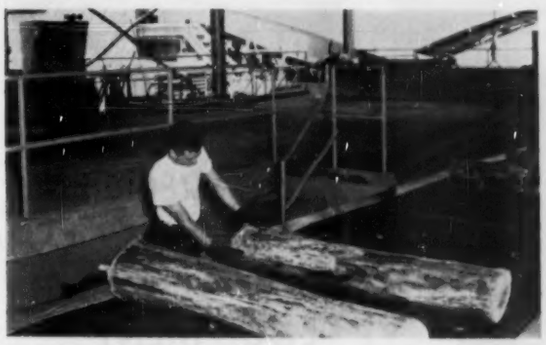


SHOWS CAUSTICIZING LAYOUT AND DIGESTERS IN NEW BUCKEYE MILL

Panorama by PULP & PAPER photographer shows Dorrco white and green liquor filters at left and next, Dorrco slaker. In middle is Link-Belt hot lime elevator and Allis-Chalmers lime kiln. At right, Graver Tank & Mfg. stainless clad digesters —there are nine of them—which are operated from ground level.

Where Buckeye Pulp Is Going

• The almost fabulous Procter & Gamble empire of industry, now makers of dissolving and paper grade woodpulps as well as cotton linters pulps (which are sold to paper mills), is known the world over for its soap, toothpaste, detergents, etc. It was established in 1837.



BUCKEYE USES GOOD WOOD

First of many quality checks is here where inspector turns barked wood to leave any defects uppermost and in view. Cat faces, or other unwanted pieces, are pulled off belt.

In their own production, Procter & Gamble uses one of the by-products of its 30-year-old cotton linters pulp operations at Memphis. This is a chemical derivative made there which is carboxy methyl cellulose. Its cotton oil business (17 oil mills) led the company into the cotton linters pulp business. And pulpwood, now being a much more stable and more plentiful source of cellulose in the South than cotton, led to its first market woodpulp venture in Florida.

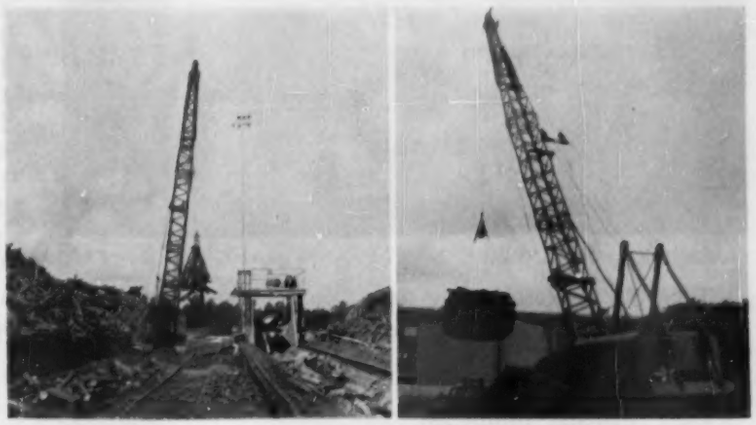
It was in 1901 that the Cincinnati firm founded its Buckeye Cotton Oil Co. subsidiary to provide cottonseed oil for use in vegetable shortening and for other uses. In 1920 it started to produce quality chemical pulp (Bukipulp) from linters at Memphis, Tenn., now sold to paper mills with Bulkley, Dunton Pulp Co., as agents. That plant has been expanded over the years so that its production is now approximately 100,000 tons annually.

Demand for quality cellulose, particularly in rayon and textile fields as well as plastics, prompted the company to turn to woodpulp. A survey for a possible site was made in the Southwest in Jan., 1950; in Canada in June, 1950. Selection of the Foley site followed. Application for a certificate for accelerated depreciation filed in Jan., 1951, placed the estimated cost of the project at $26,777,735 of which the certificate granted 65% of $21,527,735 for the five year write-off period.

Cost of the 300-ton per day mill plus acquisition of 370,000 acres of forest lands brought the investment of Procter & Gamble to over $30,000,000.

Present indications are that American industries will contract for most of the mill's 100,000-ton annual production but some will be exported. The principal users of cellulose pulp abroad are located in England, Italy, western Europe and Japan. Principal uses overseas are for rayon, films, and to a lesser extent, plastics. But the mill is constructed to make paper pulp as well as acetate and viscose grades.

Prior to erection of the Foley mill,

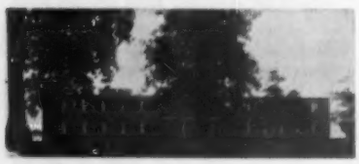


HOW BUCKEYE MILL UNLOADS RAIL CARS AND TRUCKS

(Left) Manitowac Speedcrane with Owen orange peel grapple, showing 2-section 400-ft. long conveyor ,extra wide Link-Belt chain. (Right) Speedcrane with slings gets more trips per truck per day because of quick turnaround.

a pilot plant was put into operation in Memphis. Pulpwood was brought from the Foley lands and each step in production and quality control developed. Sample quantities of the pilot plant product, up to 20 ton lots, were shipped to customer's plants for testing.

Further research work for the Foley mill will be conducted in a new 31,000 sq. ft. laboratory building in Memphis, where the Buckeye Cotton Oil Co.'s Cellulose and Specialties Division has its headquarters. Here 140 persons, of whom 40 are technically trained specialists, will continue basic and applied research in: (1) improved processes of manufacture and control; (2) uses for by-products of pulp making process; and (3) finding of new end-uses for both cellulose pulp and protein products.



WHERE PULP RESEARCHERS WORK

New Cellulose Research Laboratory in Memphis, where Buckeye staff of 140 will be working.

THE MEN BEHIND THE FOLEY MILL

Continued from page 72

And now it has a new pulp research center in Memphis, too, with 140 on the staff.

Here are men of the Buckeye subsidiary behind this new mill:

W. L. LINGLE, president, Buckeye Cellulose Corp., Cincinnati.

W. F. BOWLD, vice pres., and gen. mgr., Buckeye Cellulose, Cincinnati (also vice pres. and mgr. of Buckeye Cotton Oil Co., another subsidiary with 17 oil mills).

C. B. METZ, sales mgr., for both Foley and Memphis mill products, Memphis.

DR. OTTO H. ALDERKS, Memphis, technical division mgr. for both mills (long experience in cellulose studies, Iowa Univ. '26, and formerly on Iowa faculty).

EARL W. GUTLIPH, in charge Paper Products Development, Chemical Pulp Division. (Was with Champion Paper & Fibre before joining Buckeye many years ago.)

GEORGE LOCKMAN, chief of inspection division, Ivorydale.

JOE WALTER, Procter & Gamble project engineer and associate head of process equipment development, Ivorydale.

DAVE FOSTER, metallurgist and engineer, Ivorydale, **W. BROADFOOT,** technical specialist, Ivorydale, **R. E. GANOUNG,** manager of engineering there, and **ALBERT LOGAN,** engineering, Ivorydale.

WHERE KEY MEN FOR FOLEY CAME FROM

In this imposing structure, in the community known as Ivorydale, Cincinnati suburb, were many men who worked on plans for new Foley, Fla., mill. This is Procter & Gamble's Engineering and Research center. Some of key operating men also came from here.

Top supervisors for Foley brought from Ivorydale and Memphis:

PAUL HONEY, manager of Florida operations.

GIL TOUGAS, plant supt.

LEE WAKEMAN, plant engineer.

LIKE MOST MODERN MILLS, THIS NEW PLANT SPECIFIED

DeZURIK EQUIPMENT

Here are just two of the many DeZurik Automatic Stock Flow Control Valves installed in the Buckeye Cellulose Corporation mill at Foley, Florida. In addition to automatic valves, Buckeye also specified a large number of manually operated DeZurik Valves.

Four DeZurik recording-type Consistency Regulators were also selected for this up-to-date installation. There are sound reasons for the overwhelming preference for DeZurik Regulators. (More than 160 have been installed this year!)

Why not let DeZurik engineers provide the solutions to *your* stock flow control and consistency regulator problems?

DeZURIK SHOWER COMPANY — SARTELL, MINNESOTA

P. S. MOORE process supervisor.

P. B. HARE, production supervisor.

P. A. PERRINE, causticizing and water treatment supervisor.

J. W. HERRINGTON, stream and power supervisor.

C. L. FELNER, quality control supervisor.

J. WRIGHT, cost control supervisor.

R. G. KRITZER, office manager.

S. G. REGISTER, land records, taxes and insurance and public relations.

WILLIAM TIMMONS, industrial relations.

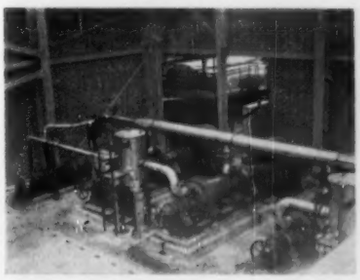
WILLIAM D. SMITH, chief forester (Florida is, of course, their first forest operation), **MARSHALL COURTNEY,** manager of wood procurement.

D. D. STEVENSON, head of technical forestry.

Some other Buckeye personnel at the Memphis pulp mill, who had at least an active though indirect interest in Foley:

E. R. STEVENS, head of service dept.; **DR. C. B WEISS,** supt.; **P. S. MOORE,** chief engineer; **E. J. CADY,** traffic manager; **A. G. HARRELL,** purchasing agent.

Buckeye also had engaged **NORMAN GIBBS,** formerly of Rayonier Inc., for special consulting services.



INNOVATIONS IN PULP PROCESS

At least three dissolving pulp mills are now using jordans for stock preparation and Buckeye is one. Here are 3 of its 4 E. D. Jones & Sons Royal Jordans, with stainless piping. Jones also supplied high speed No. 1 Refiner for broke, and Jones Pulpmaster.

Procter & Gamble Sales In Year—$911,050,045

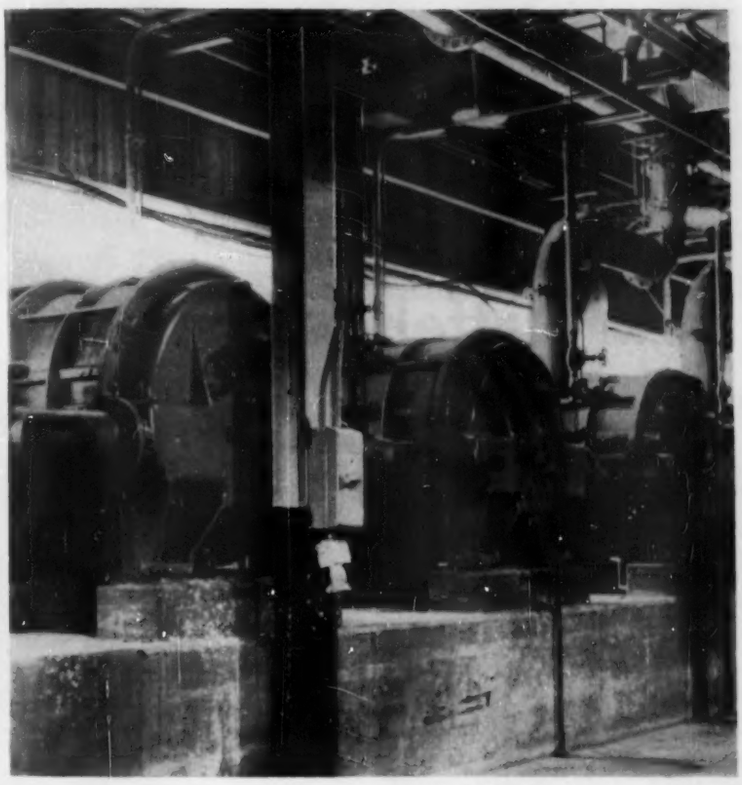
Procter & Gamble's diverse worldwide business was biggest in its history in the fiscal year ending June 30, 1954:

	FY 1954	FY 1953
Net sales	$911,050,045	$850,263,313
Taxes on income	$62,403,646	$46,499,097
Earnings after taxes	$52,328,002	$42,031,863

It paid total dividends of $31,436,556 in FY 1954 (at $3.25 common, $8 preferred) as compared with $25,178,005 (at $2.60 and $8). Under stock options since 1951, employes have over 220,000 shares common.

There are 20 Procter & Gamble subsidiaries, eight in U.S., including Buckeye Cellulose and Buckeye Cotton Oil.

What, actually, do Vacuum Pumps on paper machines handle?



Paper mill engineers know that it is actually a mixture of air and water vapor, but the custom of rating vacuum pumps in terms of air capacity alone causes this important fact to be frequently overlooked.

The presence of this water vapor causes a considerable reduction of the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump the bulk of this water vapor is effectively condensed, due to the Nash operating principle. The air handling capacity of the Nash is therefore not reduced.

That is one of the reasons why Nash Vacuum Pumps are standard in over a thousand leading Paper Mills.

NASH ENGINEERING COMPANY

443 WILSON ROAD, SO. NORWALK, CONN.

PLANNING WORK AHEAD

THESE MEN DIRECT OPERATIONS at Glatfelter Co. They are (l to r, from man at front left with glasses) R. E. MILLER, Production Supervisor; R. STRAUSBAUGH, Pulp Mill Supt.; G. RICE; L. B. OWEN, General Mill Supt., A. C. MILLER, Paper Machine Supt., A. J. LUETTGEN, Mill Manager, S. C. BURNS, Finishing Room Supt., R. LEONARD, Ass't. Production Supervisor, A. E. ALWINE, Sales-Production Coordinator, K. S. WHISLER, Quality Control Supervisor and P. H. HERSHEY, Technical Director.

How Glatfelter Upgrades Products

This 90-year-old company shifts from soda to kraft pulping and enlarges its bleaching facilities

● A major expansion of bleaching and pulp making facilities has recently been completed at the P. H. Glatfelter Co., Spring Grove, Pa. Better brightness is the hoped-for resultant of shifting to the Solvay process of chlorine dioxide bleaching; improved strength and greater yield are the expected benefits of the changeover from soda process to kraft. It also means that the Glatfelter Co. has taken another major stride towards integration, with an eye toward full integration in the near future.

This expansion, costing $4,000,000, is the final phase of a $7,500,000 improvement program which culminates the company's celebration of its 90th year. In a visit to Spring Grove, PULP & PAPER found many reasons why the P. H. Glatfelter Co. has a reputation for doing things well.

Here, seven digesters produce about 150 tons of pulp daily and six Fourdriniers make more than 225 tons of fine quality papers.

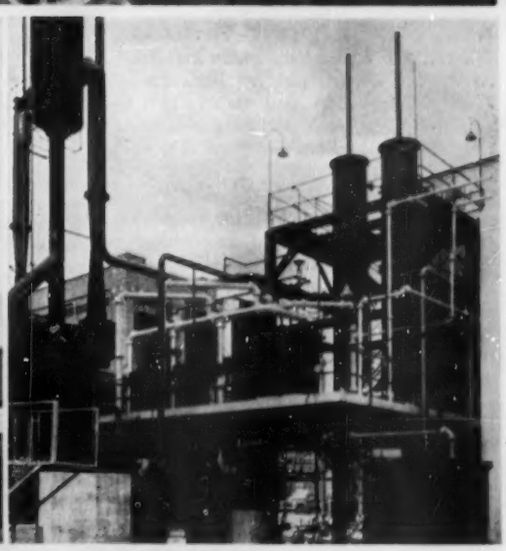
Philip H. Glatfelter, grandson of the founder and present chairman of the board, likes to picture his company as of average stature and he believes that American industry has need for such companies as well as for its industrial giants. This story of the Glatfelter Co. is told in part by him and his son, the firm's youngest president, Philip H. Glatfelter III.

HIS ELECTION CAME AS SURPRISE

PHILIP H. GLATFELTER III, Pres. of Glatfelter Co., discusses a management policy with his father, PHILIP H. GLATFELTER, Chairman. Phil's election to presidency came as surprise to him and he later told a friend that when he entered the board room, he had no idea he was going to be elected at that meeting.

GROWTH PATTERN SET BY FOUNDER—The Glatfelter mill today is quite a contrast to the one-ton-a-day capacity mill of 1863 when it was purchased by Philip H. Glatfelter, son of a Swiss immigrant. Before the purchase, Glatfelter had worked at his brother-in-law's paper mill (Loucks & Hoffman), at Gunpowder River, Md., for seven years. When the mill at Spring Grove was offered for sale, he bought it for $12,000. The mill produced one ton a day of rice strawpaper on a 56 in. Fourdrinier for markets in nearby Philadelphia, Pittsburgh, New York and Baltimore.

Today, its six Fourdriniers, ranging from 62 in. to 190 in., fabricate more than 225 tons daily of fine grade book and converting papers for these same markets. The mill was one of the first to mix pines with hardwoods, cooking poplar, oak, sycamore gum, and maple. When the company converted to that process in 1895, it was a pioneer in that process.



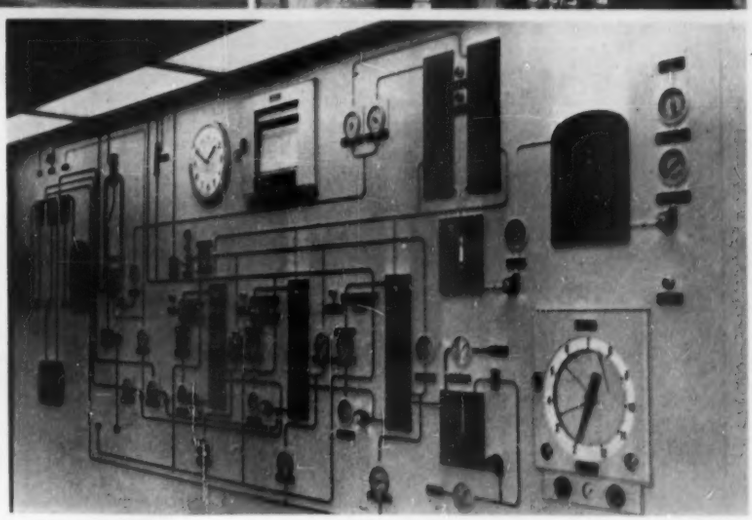
EXPANSION AT GLATFELTER

NEW AIR VIEW (at top) of Glatfelter Paper Co. mill at Spring Grove shows recently completed Combustion Engineering Co. recovery building and new bleach plant (white buildings, center). Mill consists of 71 buildings, on 240 acres.

NEW CHLORINE DIOXIDE bleaching plant (above, left) includes three 100-ton bleached pulp storage tanks. Construction was by Stebbins Engineering & Mfg. Co., and Rome Construction Co. Plant is lined with acid resistant brick set in Vitro-Plast by Stebbins. Dow Chemical's Saran lined pipes are in all tanks, floors and sewers; Impco provided equipment.

EXTERIOR of newly constructed Solvay process chlorine dioxide bleach liquor generating plant is shown above, right.

CONTROLS for Solvay chlorine dioxide generating plant are regulated on Minneapolis-Honeywell graphic control panel (at right).



Before the day of electric drives, water power was used to run the beater and machine rooms. The senior Mr. Glatfelter recalls that his father's hobby was electricity and instead of having the usual oil lamps for illumination, they had electric carbon arc generators. They also electrified their jordans and beaters and put the first single motor electric drive on two paper machines around 1913.

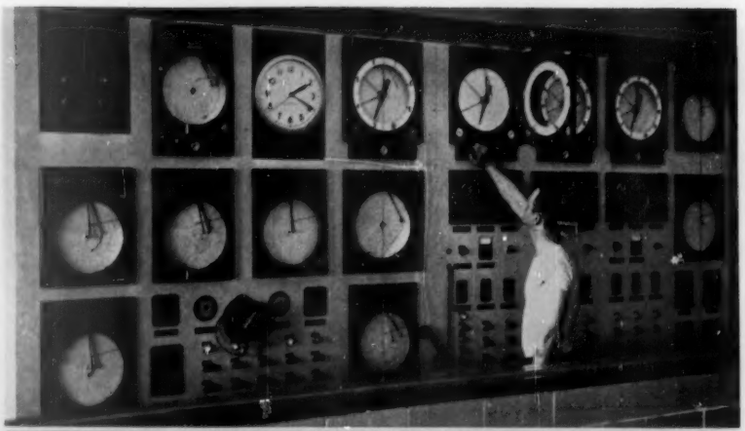
Practically the entire mill was revamped in 1920 when over $1,000,000 was spent in improvement. A Black-Clawson 172-in. Fourdrinier with General Electric synchronous motor and General Electric 3000 kw turbine were some of the improvements. A Pusey & Jones Co. 190-in. Fourdrinier was installed in 1930, along with expanded beater equipment. Three stage bleaching began that same year when three Bellmar bleachers were added.

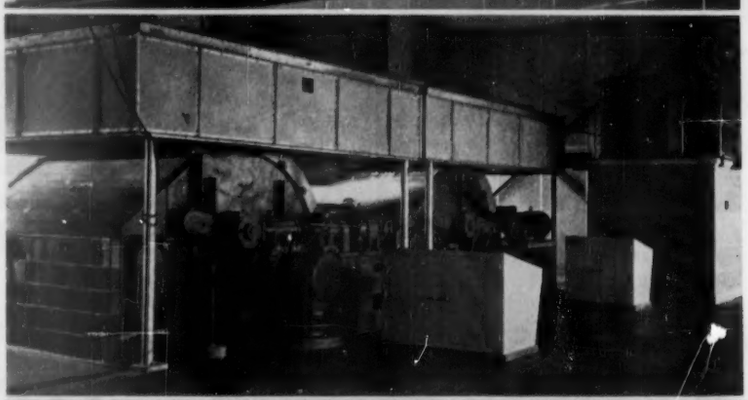
Today, the Glatfelter mill consists of 71 buildings encompassing 240 acres of land and lakes.

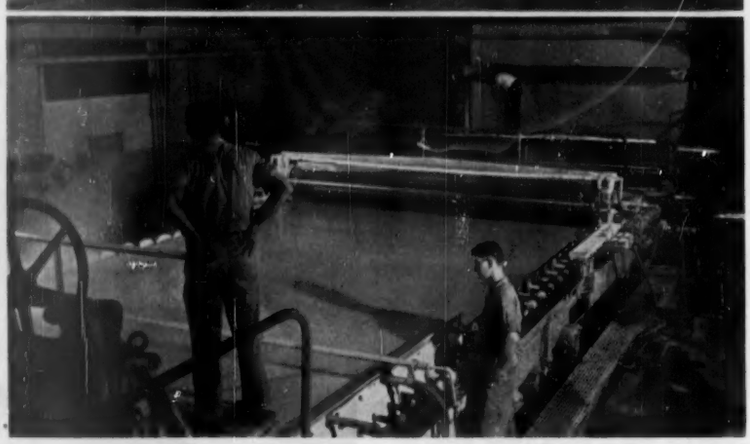
NEW BLEACH PLANT—The new 160-ton a day chlorine dioxide bleach plant, was engineered by Roderick O'Donoghue, pulp and paper mill consulting engineer, and is designed ultimately to house a complete three-stage bleach operation of 300-tons daily.

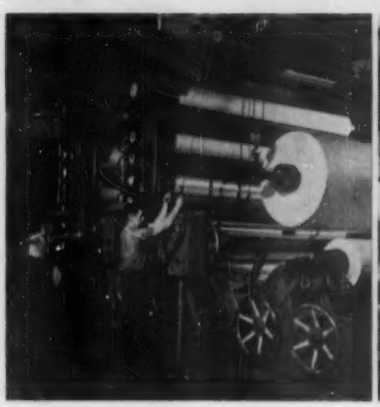
Pulps are bleached in three stages: chlorination, hypochlorite and chlorine dioxide with the elimination of the conventional caustic extraction stage.

Unwashed hypochlorite bleached pulp is pumped at about 3.5% consistency from the old bleachery through a Transite pipe bridge and washed in an Impco vacuum washer. It is then discharged at high consistency to a steam mixer where it is heated to 180°F. After passing through an Impco thick stock pump, liquid chlorine dioxide is added and the pulp then flows through a vertical mixer and into a 48 in. pre-retention tower. This tower rises four floors and dis-









INTERIOR VIEWS

ENTIRE NEW BLEACH plant is controlled by Minneapolis-Honeywell instruments from this control board (top).

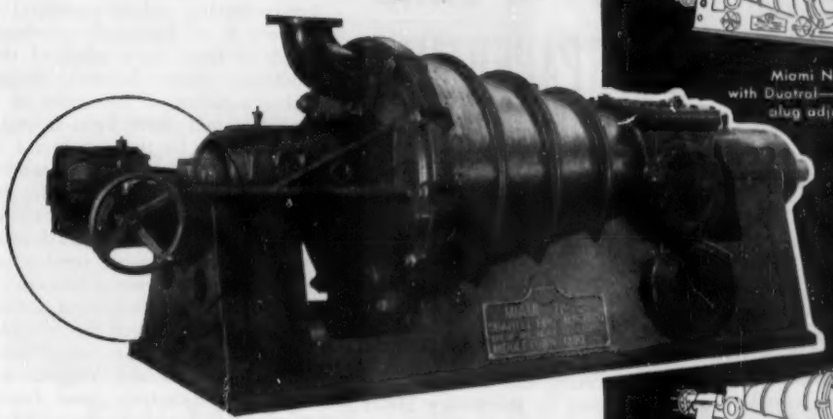
OPERATING FLOOR (second from top) of bleach plant has two Impco washers and Honeywell control consoles.

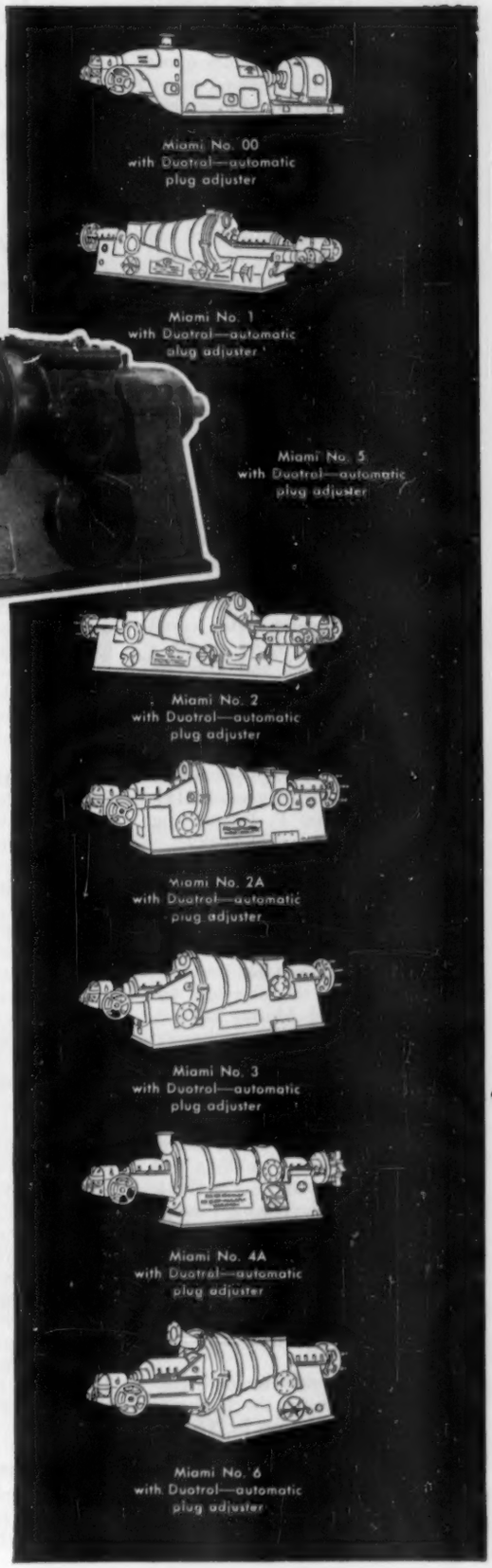
STOCK FLOW on 190-in. Puseyjones Fourdrinier (above) is watched by MORRIS WAGNER and GEORGE SMITH.

FARREL-BIRMINGHAM calender stacks (far left) are recent addition to Glatfelter paper machine; (l to r) MERLE STREMMEL and CLETUS BARNHART.

ADJUSTING AIRBRAKE on Cameron slitter and rewinder on No. 1 Puseyjones Fourdrinier (at left) is KENNETH KALTRIDER, while BYRLE BARRICK (right) guides roll of newly-made paper to rewinders; ROBERT SHENBERGER (center) cleans doctor blade on calender stacks.

the parade never stops





The day never dawns that finds the Shartle shops devoid of Miami jordan orders. True today. True every day for the last forty years. The parade never stops—and here's why.

- Sound engineering born of extensive, practical mill experience.
- Extra rugged construction of Shartle jordans, plus the precision machining that makes for smooth operation and low outlays for maintenance.
- The application of Duotrol* plug adjusters to provide automatic control of the plug—based on variations in volume and/or density of the stock in the line; or based on changes in the vacuum at the suction couch, if preferred.

Given those many sound reasons for Miami superiority, plus the presence of a full range of sizes from which to choose, what wonder that the jordan parade at Shartle never stops.

Details and specifications upon request.

*Trademark

BLACK-CLAWSON

SHARTLE BROS. MACHINE DIVISION • Middletown, Ohio

charges into the top of the chlorine bleaching cell where the pulp bleaches for 3¾ hours.

High pressure water nozzles dilute the stock before it is pumped to another vacuum washer and the washed pulp is then discharged to the first of two belt conveyors and distributed to one of the three 100-ton storage chests. These chests are constructed by Stebbins Engineering & Mfg. Co., lined with its acid-resistant brick set in Atlas Vitroplast, and by Rome Construction Co. Dow Chemical Co's. Saran-lined pipes are in all tanks, floors and sewers. Tank pumps are operated by Westinghouse 125 hp motors. Also included are Impco's filter type washers.

The chlorine dioxide generating plant can produce three tons of chlorine dioxide in 24 hours and was engineered by Glatfelter Co. engineers in cooperation with the Solvay Process Div. of Allied Chemicals. The entire process is controlled by a Minneapolis-Honeywell graphic panel on which each operation is color-coded. The color code is repeated in special acid proof paint on the actual process flow.

A five story steel and concrete building with glazed tile walls houses the latest model Combustion Engineering Co. spray type recovery furnace with design rating (oil fuel only) of 100,000 lbs./hr. Design pressure is 675 psi and steam conditions—S.H.O. 600 lbs. psi at 700° F. Engineering was also by Roderick O'Donoghue.

Black liquor at 50% solids is pumped from the evaporator building to a 90,000 gal. storage tank near the recovery building. It is then pumped through a mix tank under the electrostatic precipitator built by the Koppers Co., and to the chemical ash hoppers to the D. J. Murray Co. cascade evaporator where combustion gases by direct contact evaporate it to 65%-68% solids. It flows at this consistency through a rotating screen in the "flow box" to the salt cake mix tank where make-up salt cake is added. This salt cake handling and storage system is by the Fuller Co. It is then pumped to the burners through direct contact steam heaters and floats in evenly distributed flakes to the hearth below. Complete dehydration and partial combustion occur while falling. Continued combustion and reduction of sulfates occur in the "char" on the hearth.

The recovery system includes continuous blow down by the Cochrane Corp. and blow-off valves by Yarnall-Waring Co. Westinghouse Electric Corp. supplied the electrical substation and control center. Also included is an Allis-Chalmers Co. deaerating heater. A 200 ft. chimney was built by

VALUABLE
PAPER MILL
At Orphans' Court Sale.
On WEDNESDAY, December 23d, 1863,
TRACT OF LAND
STONE PAPER MILL,
A Frame Machine House,
STONE STOCK HOUSE,
AND
FOUR TENANT HOUSES.
WILLIAM D. HIMES,

WHAT FIRST GLATFELTER BOUGHT

Rust Engineering Co. Boiler control instruments are by the Bailey Meter Co. and liquor controls by Foxboro.

Since start-up, the recovery unit has been delivering 90,000 lbs. of steam per hour. This represents about 150% of rated load.

MANAGEMENT RELATIONS—The Glatfelter Co. has an excellent community, public and customer relations program, rated among the industry's most outstanding. The company has fostered many unusual community social and promotional projects. Its growth from less than $100,000 sales in 1864 to over $16,000,000 in 1953 indicates the sound guidance of the owner-managers, who are at work every day in the mill.

Through rearrangement of capital structure and a provision for regular retirement of the preferred stock outstanding, the required dividend payments of this stock have been reduced from $100,000 five years ago, to $40,000 at present, reflecting a financial management healthy for growth.

Among other things Glatfelter does well, is keep its customers. One-fifth of the Glatfelter customers have been with the company for 30 years or more, accounting for 67% of its production. Get-acquainted sessions are held with publisher groups, printers and other users of Glatfelter papers. Their visits include trips through the mill, the tree farm and to the Glatco Lodge.

COMMUNITY RELATIONS—By cultivating a planned community relations program, the Glatfelter Co. has reaped a harvest of good will. It has helped farmers develop cash incomes from their woodlots by having its foresters teach them how to cut their woodlands efficiently and economically. On its tree farm lands, near Gettysburg, the first certified tree farm in Pennsylvania, it gives practical demonstrations of the right way to manage a typical mixed hardwood stand. It participates in large scale reforestation programs, organizing the Boy Scouts of the valley in competitive contests to reclaim wasteland and convert it to financially productive stands of trees. As a result of these practices, many farmer's children within a radius of 100 miles of the Glatfelter mill, have been helped to go to college by the new-found and recurrent income from the trees on the homestead. The company also provides a free marking service to woodland owners and makes its foresters available for technical services and educational work among farmers.

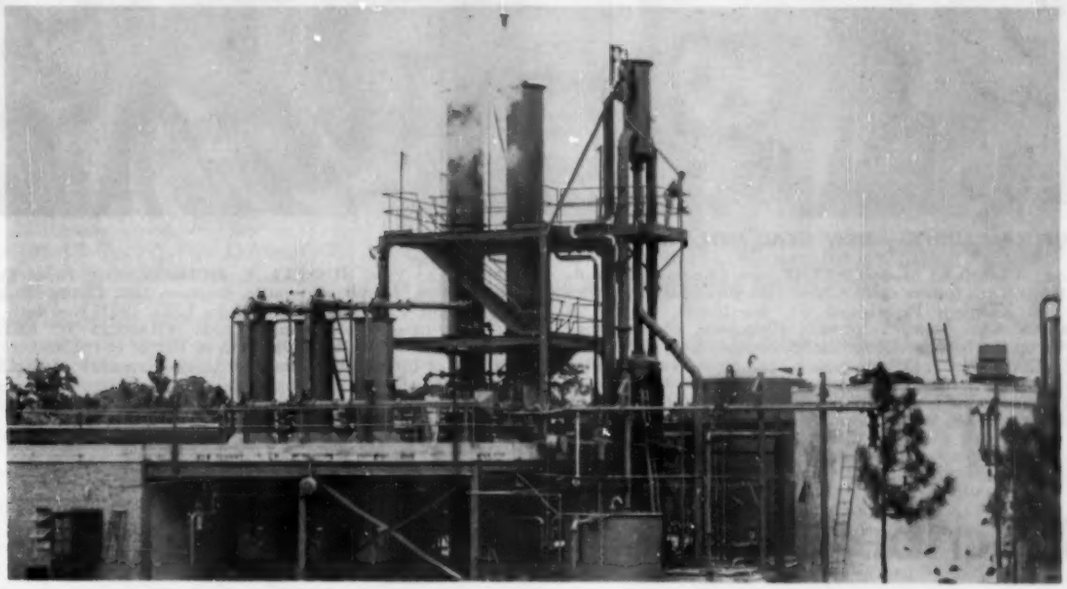
Field days for pulpwood shippers are held, during which the company's foresters in cooperation with Pennsylvania, Maryland and Virginia state foresters, demonstrate good forestry practice and latest equipment. Separate recreation is provided at these field days for children, under the supervision of a doctor and nurse. A church organization, such as a women's auxiliary, supplies refreshment, thereby enabling them to raise funds for worthy purposes.

COMMUNICATIONS' MEDIA—A glimpse through Glatfelter's historial files reveals it has done well in pioneering in company publications. As early as 1920, it had a well-edited and illustrated employe magazine, *The Barker*. Three top-notch booklets, well-written and containing excellent photographs, describe the company's forestry, pulp and paper operations. They are *"A Short Course in Papermaking," "Paper and Its Performance,"* and *"Forestry and Paper."* The latter has been revised and recently reissued and was singled out for special mention in APPA's Community Relations Progress. Another booklet, *"The Glatfelter Story,"* commemorating the company's 90th anniversary, has received many compliments for the quality of its writing, photography and printing, all on Glatfelter paper, of course.

A new 16mm sound color movie, *"The Miracle of Paper,"* describes the company's papermaking operations, products and their end use. Ten prints of this film are almost constantly circulated to schools and service clubs.

Today, as the result of four generations of owner-management doing many things well, the Glatfelter Co. is a respected leader in its valley and in its industry.

IN CHLORINE DIOXIDE BLEACHING, TOO . . .



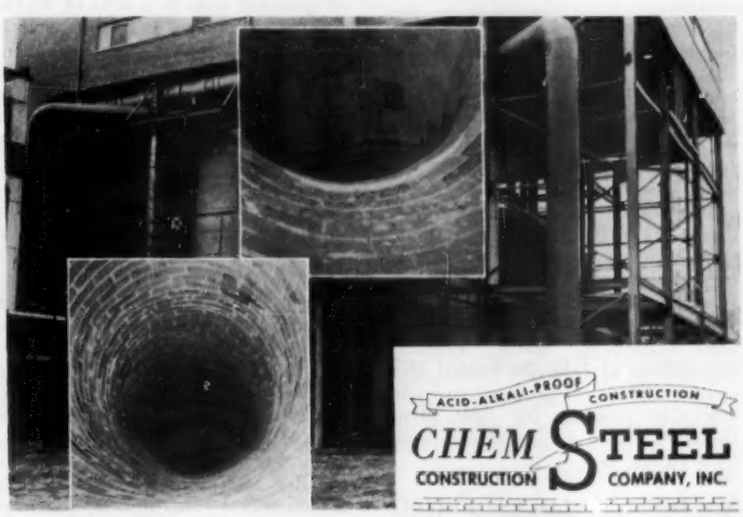
If it's CHEMSTEEL-INSTALLED, IT'S ACID PROOF!

Chemsteel, through long experience serving corrosion needs of steel, chemical, textile and food industries, is especially geared to protect your C102 bleach equipment. Typical of its work are the acid-brick installations at Camp Manufacturing Company, Franklin, Virginia.

The three Reactors of the C102 Plant, each 17'2" x 3'4" I.D., and the two Absorbers, 25' x 3'4" I.D., were lined with 4½-inch acid brick over membrane. Distributor plates, 2-piece supporting plates, and ceramic lined nozzles were also installed.

Chemsteel used 2½-inch acid brick over membrane to protect the C102 Receiver Tank, 8' x 8' I.D., and the 7' x 8' I.D. Spent Liquor Tank. Acid-proof tile over membrane was used to line the C102 Storage Tank, 25' x 18' I.D. A special flat concrete top was designed and installed by Chemsteel on the latter tank. This top proved more economical than the "dome" design usually found on such Solvay Process units.

Pre-retention tubes at the Bleach Plant were a special problem. Under a strong, continuous attack from the C102 solution in the pulp, the acid brick had to provide a smooth acid-tight curve within the elbows for efficient pulp flow. The photograph shows how successfully Chemsteel handled the job.



WRITE • WIRE • PHONE

When you are faced with a difficult corrosive problem in your bleach equipment, digestors, or any other paper mill units, call on Chemsteel. Let the experience and know-how of this field-proved organization save you money through correct installation. We'll gladly discuss your problems without obligation.

CHEMSTEEL CONSTRUCTION CO., INC., Chemsteel Bldg., Pittsburgh 32, Pa., Phone: MUseum 1-7500

SOUTHERN SUPTS.—NEW HEAD MEN, NEW FACES, PARTICIPANTS

(L to r): **CHARLES M. McCARTHY**, new Chairman of Southern Supts. Div., former upstate New York papermaker now Res. Mgr. of Southern Paperboard, Ft. Wentworth, Ga. **T. R. BARNES**, Gen. Supt., Pulp Mill, Champion, Canton, N.C., moves up to become Chairman of Southeastern Div. **J. D. DAILEY** (initials "J. D." comprise his full given names) Production Mgr., Riegel-Carolina, is one of two new faces in Southern Supts. line-up, he is new Third Vice Chmn., Southeastern Div. **JAMES C. HAIR**, Mgr. Crossett Paper Mills, is Southern Div.'s new Third Vice. **RUSSELL T. HUDSON**, Asst. Paper Supt., Union Bag, completed term as Southern Div. Chairman. Born in Gallion, La., he graduated from LSU, 1941, was with I.P. a short time before joining Union. **FRANCIS W. KELLY**, Secy-Treas. of Southern Div., was in charge of registration. He is Mgr. of Industrial Relations for Union, Savannah, started long career with Union at Hudson Falls, N.Y., 35 years ago. **L. F. DIXON**, Vice Pres. and Gen. Mgr., Paper Div., Ecusta Paper subsidiary of Olin-Mathieson, urged Christian actions for mill men.

Describe South's New Installations

Effluent plant and 6th bleach stage explained in Asheville; and every man registered promised complete transcript

• For the first time on record, the officials of a Superintendents' regional meeting are planning to issue a complete transcript of papers and discussions to every man who registered.

This ambitious undertaking is a follow-up project of the two full days of papers and panels at Asheville, N.C., the mid-October joint meeting of the Southern and Southeastern division. Russell T. Hudson, assistant paper mill superintendent, Union Bag & Paper Corp., Savannah, told PULP & PAPER that, with approval of his official colleagues, he is taking on his shoulders the job of getting out the document.

Russ Hudson, as chairman of Southern division, and Clyde G. "Speedy" Jones, Ecusta paper superintendent, and his opposite number as head of the Southeastern group, wound up their terms by presiding at the biggest Southern joint meeting ever held. Their followers showed their appreciation by presenting a fine watch to Mr. Hudson, golf clubs to Mr. Jones, and presents also for their wives.

NEXT YEAR—SAVANNAH MAY BE SITE—Next year this annual Southern event, one of the best attended of the round of Superintendents' meetings, will probably be held at Savannah, Ga., and most likely at the Gen. Oglethorpe hotel in mid-October. The reason—Charles M. McCarthy, manager of the Southern Paperboard mill near Savannah, is the new chairman of the Southern division and his vote will carry the most weight, as it is his division's turn to select the 1955 site. Mr. McCarthy, unable to attend the Asheville meeting because of important activities in the Gair company, his company's parent firm, will certainly join with his colleagues in picking either Savannah or nearby Jacksonville.

Since Ted Root had just moved to Montreal to become v.p. and mgr. of the new Black-Clawson Canadian company, the whole load of work in behalf of the affiliates at Asheville fell on Charles P. Kirchen, of Buckman Laboratories, lone affiliates chairman at the meeting.

Registration made a notable gain over 1953 in that 33 major Southern companies were represented by 86 men, compared with 92 registrants from 28 mills at the 1953 sessions. There were a half dozen men from mills outside the South. "Peddler" registrations at Asheville totaled 163, against 194 in the previous year. An enjoyable program for "the Mrs." found 70 women registered, compared with 78 last year.

MACHINE BUILDERS REPORT ON DRYING—High excess horsepower demands resulting from inadequate removal of condensate from 60 in. dryer rolls were reported by H. B. Wilson, of Pusey & Jones Corp., who gave statistics on speeds at which cascading results. Also given was a description of results obtained in tests of that company's equipment to control water rim.

Rejecting the thesis that paper drying need remain an "art," A. J. Cirrito, of Rice Barton Corp., decried the inclination to generalize on the basis of qualified tests in a field of highly technical problems embracing several large variables. Reviewing fundamental problems he presented a series of formulas for heat transfer study. He urged use of higher pressure steam at the dry end to reduce the number of rolls required.

Increasing felt tension up to 10 reveals a rising course in usefulness but tapers off from that point on 42 lb. paper. However, as the sheet increases in dryness, its own shrinkage performs the same service in maintaining dryer surface contact as does felt tension, which thereby loses its importance. The effect of condensate pool inside the dryer rolls, he said, is not important in heat transfer but should be studied for horsepower requirements. In subsequent discussion he said: As the dry end is approached, the felt should increase in dryness; felt tension tends to prevent vapor barriers; felt makers need to make felts susceptible of more tension.

Speaking of APPA questionnaire on felt experience, to which 66 responded, 23 mills gave tension rates ranging from 2 to 10 lbs. (average 4.42 lbs.). Asked if entrapment of air on the underside at the nip became an increased factor at high speeds, the speaker said this is the point of maximum heat application and at higher heat there may be more vapor barrier.

Changed demands of users of liner and corrugating board were discussed by a panel including Tom Coldewey (St. Joe Paper) as moderator, George Howell (The Mead Corp.), Mack Higdon (Southern Paperboard), and Russ Hudson (Union Bag & Paper). Originally meeting a Mullen test, now it goes through a laboratory for a myriad of musts, and the customer often adds "the color isn't good."

WEST VA's EFFLUENT PLANT—Description of the half million dollar closed water system installed at West Virginia Pulp & Paper Co. as part of a general program that includes the two million dollar effluent treatment plant at Covington, Va., was given by W. C. Thompson, who is assistant supervisor in charge of four of the machines in that mill.

Waco filters were installed to treat the white water from machines and put it back to work in showers. A second grade system with savealls performs other duties and some of the primary system is spilled into it, fresh water make-up being used exclusively in primary and for special purposes. Three to four million gallons of water per day are saved. Water is metered to detect and correct unusual losses. The mill draws water from the river. At times, flow and demand are so close that closing down has been threatened.

Addition of a sixth stage of bleaching with chlorine dioxide at Riegel-Carolina Corp. was described by J. D. Dailey, production manager, who said the redesigned system with its improved chemical manufacturing went into service in 1954. The first five stages are conventional. Results include increased brightness range of 85 to 88 in place of the previous 68 to 70, with no strength loss. Saran-lined pipe is used. Engineering on the original bleach plant at Acme, N. C., was done by J. E. Sirrine Co. under direction of John Schuber, Solvay Process Div., and the 1954 improvement were effected by Mr. Schuber and Riegel-Carolina engineers.

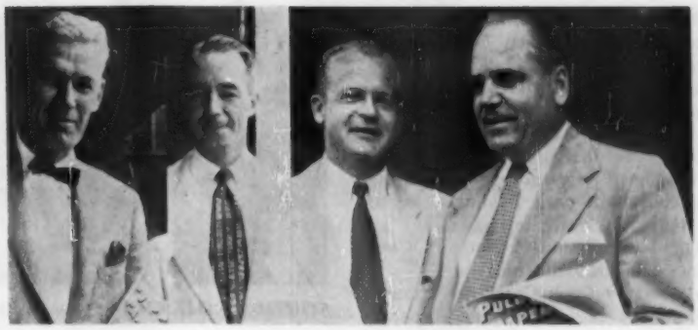
BIG WHEELS IN SOUTH SUPTS.
BUNN BEASLEY (left), veteran Secretary and Gen Supt., Brown Paper Mills, and CLYDE (SPEEDY) JONES Ecusta Paper Supt., who completed term as Southeastern Supts. Division, are shown reading Southern news in—of course—PULP & PAPER magazine.

Successful human relations in mills depends on a good environment or atmosphere and high wages and fringe benefits cannot substitute for that essential, said E. B. Carrett, Ecusta Paper's industrial relations manager.

GOOD AND BAD IN WOODLANDS—Steadiness in pulpwood prices based upon a large inventory is cheaper in the long run than running low and being faced with need of procurement stimulation, said H. H. Flickinger, of International Paper Co.'s Georgetown (S. C.) mill, who outlined some accepted practices in that field. Mr. Flickinger repeated the adage that a large mill needs to own forest acreage sufficient to provide 50% of its supply. He listed as "dangerous practice" the over-cutting of nearby lands. Industrialization in the South means a better living wage, he said, and with it is a need to make the woodlands worker's efforts more productive. Use of hardwoods by the mills is a welcome development to forest managers.

Details of rebuilding Union Bag & Paper Corp.'s No. 4 Pusey & Jones machine, effected in 1952 by mill crew, were recounted by C. H. Carter, of that company.

R. C. McDonald, Ecusta Paper



TWO SPEAKERS AND TWO LISTENERS AT ASHEVILLE

L to r: SAMUEL S. CROCKER JR., Sales Mgr., John W. Bolton & Sons, Inc., who told how 300 industries wrote in for copies of Bolton prizewinning essays on employe-management relations and invited listeners to suggest an essay subject for 1955; A. HUNTLEY JOHNSON, new Southern Representative for Bolton, headquarters at Pensacola, Fla. Born in Detroit, graduated from Mich. State in '42, he has been a Marine Corps flying officer until recently; CARL W. BRINK, Sales Engineer for Hermann Mfg. Co., Lancaster, O., manufacturers of Claflin refiners. He was Project Engineer, Ford Motor Co., until a year ago. Born in Indianapolis and graduate of Purdue, he was 12 years in air force, mostly overseas, came out as a Captain; BRUNO E. PREVOST, Gen. Mgr., Bolton & Sons. Born in Ontario, grad of Montreal Tech, was first in industry with Union Bag and was its Chief Engineer. He told Asheville meeting of spring tour of European industries.

Crocker Invites Bolton Essay Contest Subjects for '55

At the Asheville luncheon, Samuel S. Crocker, Jr., sales manager for John W. Bolton & Sons, Inc., made the Bolton contest awards to top Southern winners. For years Bolton has made a substantial contribution to industry progress with its annual money and gift awards to scores of mill employes all over the country who win prizes in the Bolton essay contests.

William W. McClure, of Union Bag's public relations dept., and Pearson M. Easterling, Sonoco mill backtender, were top winners in the South this year.

Mr. Crocker reported that over 300 industrial firms have written voluntarily to Bolton in the past year asking for copies of Bolton's bound volumes of the 13 prizewinning papers, which for two years now have dealt with subject of employe-management relations.

Anyone in this industry is invited to write to John W. Bolton & Sons and suggest a new essay subject for the 1955 contest—"subjects on which all men and women will be eligible to express their heartfelt thoughts and sincere convictions for the good of all," said Mr. Crocker. (Letters may be addressed to him at John W. Bolton & Sons, 9 Osgood St., Lawrence, Mass.)

Corp., was moderator of a panel on maintenance in which C. A. Stone, Champion Paper, C. H. Carter, Union Bag and A. B. Gregory, Riegel-Carolina, participated.

Development of brown stock refining was discussed by Frederick Wierk, head pulp and paper engineering consultant with Reynolds, Smith & Hills, Jacksonville, based on an original installation in National Container's Jacksonville mill in 1937. It was read by Cecil Curry of National Container's Big Island mill. A paper on screen room operation by Lamar Murray was read for him by Jack Thompson, Southland Paper Mills. A film on wire making was shown by George Clayton, Wisconsin Wire Works.

THE NEW OFFICERS – Officers named by Southeastern Division were: T. R. Barnes, Champion Paper & Fibre Co., chairman; Robert B. White, Sonoco Products Co., first vice chairman; M. L. Boinest, Jr., Halifax Paper Co., second vice chairman; J. D. Dailey, Riegel Carolina Corp., third vice chairman; and Edward Luczyck, Southern Johns-Manville Products Co. of Va., secretary-treasurer.

Charles McCarthy, Southern Paperboard, was named Southern Division chairman, with Albert G. Rosyzskie, International's Camden mill manager as first vice chairman; W. C. ("Jake") Hayes, National Container Corp., second vice chairman; James Hair, Crossett Paper Mills, third vice chairman.

TWO RAYS AND WIVES ON A TOUR OF "DIXIE"

Top–Mrs. Harter and her husband, RAY E. HARTER, Asst. Sales Mgr., R. T. Vanderbilt Co., Inc., on a business swing through the Southland, including the Asheville fall meeting.
Below–Another Ray–RAYMOND L. BARTON, Superintendents Trustee, and Gen. Supt., W. C. Hamilton & Sons' Michigan Paper Division, Plainwell, Mich., and his wife, "Gil," made a vacation of their tour through 6 Southern states. But it was Superintendents "business" while at Asheville.

SOUTH'S GOLF CHAMPS—AND THE CHAMP GOLF IMPRESARIOS, TOO

"Huricane Hazel"–remember?–made it a rough day for golfers as outer fringes of that weather freak lashed Beaver Lake course at Asheville (l to r): M. L. BOINEST, Halifax (Roanoke Rapids, N.C.) Paper Supt., was low gross for men and for third time won Gene Bechard Memorial Trophy presented by Eastwood-Nealley Corp., and so took it home for keeps. MRS. RAY DUSTRUDE, wife of Asst. Sales Mgr., Albany Felt Co., scored low gross for ladies. L. L. (BUSTER) GRIFFITHS, Sales Rep in South for Draper Bros. felts, ran the golf show. VERNON D. KNIGHT, of Mobile, former I.P. Administrative Asst. and now Eastwood-Nealley's Southern Rep., bought all golf presents awarded at dinner, and it was agreed he made excellent selections.

PREVOST TELLS ABOUT EUROPE –Bruno E. Prevost, general mgr. of Emerson Mfg. Co. division of John W. Bolton & Sons, told the Asheville luncheon audience of the improved condition of the paper industry in many European countries he recently toured. Especially in West Germany, he said, the industry has made a phenomenal recovery, even producing more than it did before the entire East Germany was lost to Russia. It has 329 paper mills, all busy, and unemployment is at a record low. Many new mills and machine additions are planned.

European industry is stepping out and will provide more serious competition in world markets, said Mr. Prevost, who was born in Ontario, graduated from Montreal Tech. He was Union Bag's chief engineer before joining Bolton in 1944. A fluent linguist, he indicated he got much information from his tour of seven European countries. The magnitude of Europe's great trade fairs impressed him, and he said much equipment was exhibited in actual operation.

He told how employes of Van Gelder Zonen, whose mills produce half of Holland's paper output, worked extra hours to keep up production when one of the mills was destroyed by fire. Many European mills are going on 7-day work weeks.

L. F. Dixon, vice pres. and gen. mgr., Paper Div., Ecusta, addressing first of two banquets, said the Southern industry now employs 125,000 with annual payroll of $233,500,000, and annually produces 9¼ million tons of paper board, and 10 million of pulp. This was a springboard for his plea that this great industry's management should conduct itself as good Christians.

At the final dinner Harry Hadley of Gardner Board & Carton, national president of the Supts. Assn., was an entertaining chief speaker.

A "Special" for Brydges

The Asheville meeting was a "special" for William H. Brydges, the industry's own "Mr. Virginian" who has been retired for eight years but still does papermaking consulting that takes him as far away as France for La Rochette Containers Co. He is an honorary member of French "Tappi."

As trustee of the Supts. Assn., he was called on to respond to the mayor's welcome and at the final banquet, Bill passed out gifts and made another speech. He was former general manager for Mead at Lynchburg.

THEY TALKED PAPERMAKING

L to r: JAMES LAWLER, Mgr. of Paper Chemicals sales for Monsanto Chemical Co., St. Louis; WILLIAM C. THOMPSON, Asst. Supervisor in charge of West Virginia Pulp & Paper Co. machines #1, #2, #5 and #8, Covington, Va., and WILLIAM P. CONANT, JR., Monsanto Paper Chemicals sales rep. in South, based at 1111 Norland Road, Charlotte 5, N.C. They talked papermaking at Asheville meeting. Mr. Lawler, a New Hampshire U. grad, who joined Monsanto in 1947 after serving as Army Ordnance officer, moved from Boston to St. Louis to head Paper Chemicals.

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Mill operators who know quality choose **Bolton Fillings** regardless of the make, type or size Jordans they use. Why **Bolton?** Check the reason:

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BOLTON FILLINGS for Beaters and Washers: **Beater Roll Fly Bars and Woods** — same uniform quality, all sizes, all makes, in Regular Heat-Treated Steel, Alloy Steel, Stainless Steel, Bolton Special Stainless and Phosphor Bronze.

Also, **Bolton Special Stainless** welded to a soft steel backing made by an exclusive Bolton process. This provides long life, acid-resisting stainless steel at the wearing part of the bar and a soft steel backing, which resists shock and prevents ear breakage to a marked degree.

Roll Woods are of selected stock — one, two, three piece or special type uniformly kiln dried.

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OLD FRIENDS WELCOME SUPTS. RAYMOND F. BENNETT (left), 1948 President of the Supts. Assn., who heads cellophane operations at Ecusta, and directed their construction and installation, and LEE M. BAUER (right), Production Mgr. of the Paper Division, welcomed the delegates at the Pisgah Forest, N.C., industries. Each described his division.

What Papermakers Saw in Ecusta Plants

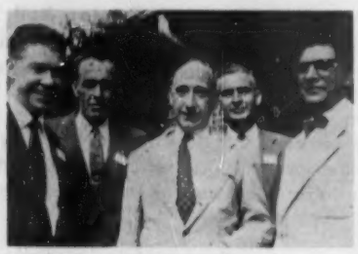
At Ecusta Paper Corp., Olin-Mathieson subsidiary near Asheville, the touring delegates to the Supts. convention saw how 100 in. rolls of cigaret paper are completely and slowly unrolled and rewound with two sharp-eyed inspectors watching for any blemishes. They are picked for good eyesight—and amazing as it may seem, their eyesight improves 25% in a year of work—the secret being they are exercising by continually glancing across the rolls.

There were shipments of cigaret paper destined for Singapore and Indonesia. Some far-off customers demand that the paper be scented and Ecusta accommodates them. Seven-color printing was also seen.

The little 100 in. Black-Clawson 300 fpm Fourdrinier machines, each making 7 or 8 tons a day of cigaret, fine, Bible or carbonizing papers, attracted great interest. The two machines viewed had only single presses, and papermakers also noted the Jones Bertram beaters, Morden Stock-Maker and Shartle jordan routine for stock preparation.

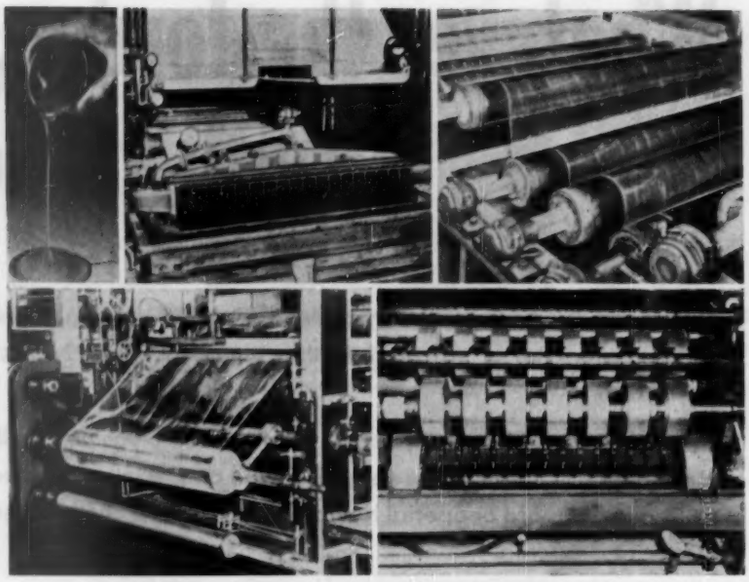
The Olin cellophane plant, another division at Ecusta, also was toured. It was noted that high alpha dissolving woodpulps from two Washington state mills were being used as raw material.

In a new addition at the Ecusta properties, Olin started in November making polyethylene packaging film and tubing.



THEY SAW CELLOPHANE, CIGARET PAPER MADE

A host and his guests at Ecusta Paper-Cellophane Divs., Olin-Mathieson, l. to r.: CHARLES P. KIRCHEN, Buckman Laboratories, who did big job as Affiliates Rep. for Asheville Supts. meeting; R. L. BULLOCK, Supt. Board Mfg., Johns-Manville, Natchez, Miss.; AL REAM, Chief Chemist, Ecusta Paper Division, Olin-Mathieson Corp., Pisgah Forest, N.C.; W. B. JENKINS, Paper Mill Supt., Crossett Paper Mills; and HOMER L. LUSBY, Paper Mill Supt., St. Regis, Jacksonville.



PULP & PAPER presents: HOW CELLOPHANE IS MADE— PROCESSES WHICH ASHEVILLE DELEGATES SAW

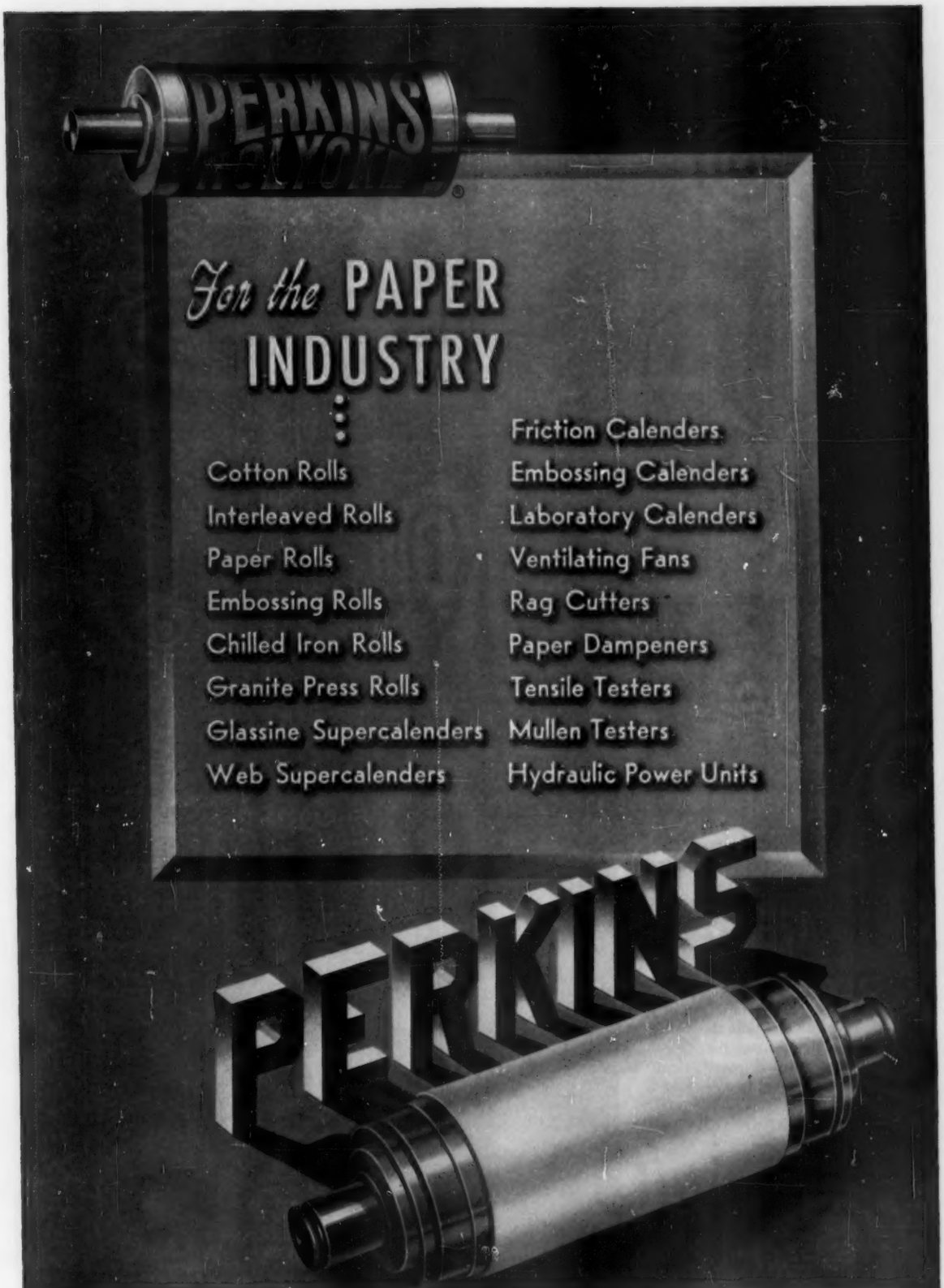
Many Southern Superintendents and salesmen at Asheville saw this process for first time at Ecusta Cellophane Division. First, dissolving sulfite woodpulp from Washington state is shredded and dissolved to liquid viscose solution, shown flowing from beaker at top left. Humidity, temperature room controls are rigid. Chemicals turn it into an alkaline solution, then chemicals are removed.
Top middle—Here liquid cellulose is cast into film. It is pumped into narrow slit running along bottom of rectangular casting head. Slit is below surface of an acid coagulating bath, so viscose is congealed into film as it is extruded. Film is drawn from bath by a roller which delivers it to—
Top right—A number of treating baths, where film is carried through by rollers. Film is successively regenerated here, washed, desulfurized, washed again, bleached, washed again, dyed if desired and finally, softened with glycerin.
Lower left—Purified sheet is passed over and under a number of heated rolls and finally wound up to produce the "Mill Roll." To render it moisture-proof it is coated with a lacquer.
Lower right—Slitting machine . . . here mill roll is slit to produce narrow rolls, such as these for wrapping cigarets. After these steps, come semi-automatic high speed weighing, inspecting, labeling, wrapping, packing and shipping steps, all of them rather familiar to papermakers.

NEW SUPT.

CARL L. HACKBARTH, new Paper Mill Supt. at North Carolina Pulp Co., returns to U.S.A. from Peru, where he was a Mill Mgr.

ROZYSKIE BROTHERS—BOTH MILL MGRS.—MEET AT ASHEVILLE

Supts. Convention at Asheville brought together ALBERT (left) and ADAM ROZYSKIE. Both were born in Leetonia, Pa., and their father was a lead burner in a sulfite pulp mill. Both have been with International Paper since 1925 and they are Managers of two big Southern mills. Albert has been Mgr. since 1947 of the 525-ton-a-day Camden, Ark., paper mill. Adam has been Mgr. since 1945 of 1,700-ton Georgetown, S.C., board mill.



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THE INVENTOR TAKES A SAMPLE

JOHN J. CANNAN, Control Laboratory Foreman, Eastman Kodak paper mills, Kodak Park, Rochester, N.Y., shows early model of his paper sampler in action. With this device, Kodak officials said they learned more about efficiency of their dryers.

In 35 Mills, They Scoffed

Until they saw new Paper Samples, which John Cannan developed at Eastman Kodak mill, go into action

● If you are wondering whether big business throttles individual initiative, the story of John Cannan and his paper sampler may help restore your confidence.

It began in the Eastman Kodak paper mills at Kodak Park, Rochester, N.Y. Mill officials were making a study of the drying capacity of their dryers and were having difficulty obtaining samples which would accurately gauge the efficiency of the dryers. John Cannan, control laboratory foreman, spoke up and said he could make an instrument that would take samples from the moving web. They told him to go ahead—and he did, "out of old wood, screws and some beat-up brass."

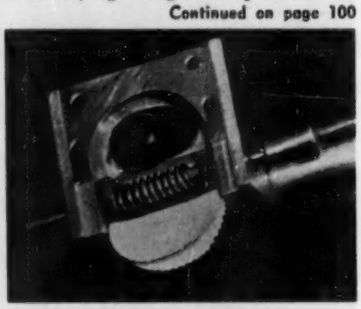
As a result, K. J. Mackenzie, superintendent, Paper Mills, told PULP & PAPER that for the first time they were able to get samples from the dryers and that they learned more about their drying operations than they had ever known before.

Eastman Kodak gave Mr. Cannan the patent rights and permission to market the sampler on his own. Mr. Cannan, in an interview with PULP & PAPER, said that he had passed up a lot of ideas in his life, but on this one he decided to take a chance. Into the new venture went some of his life savings and armed with an improved model, the blessing of friends at Eastman and a two-weeks vacation, he set out on a tour of 35 pulp and paper mills in New York and Massachusetts. As any salesman will tell you, 35 mills are a lot of calls to make in two weeks.

At every mill, he was met with disbelief or grins when he told his story, until on each occasion he went over to the moving web and actually snapped a sample. In one mill, the technical director told him, "That's right where I've been wanting to get samples." Another mill wanted to put in a smoothing press, but had no idea where to put it. In a matter of minutes, samples were obtained from various locations in the dryers, and mill officials had a fairly good idea just where the smoothing press was needed. In one mill, he took moisture samples from within 1 in. of a Hygrotester Sensing Unit, and showed mill management just how close the Hygrotester moisture readings were to actual running moisture.

The importance of the paper sampler, according to Mr. Cannan, is that for the first time a sample can be taken from a moving web on a machine without causing a break and can quickly be put into weighing bottles within 3 to 5 seconds for precision laboratory work. Samples can actually be taken from within the dryers, so that a complete drying curve can be developed. Check samples can be obtained from any position across the web for moisture, basis weight, thickness, etc. It can be used after wet felts as well as at the dry end. Mr. Cannan says that many mills have been trying to get samples in the

Continued on page 100



CLOSEUP OF A SAMPLE

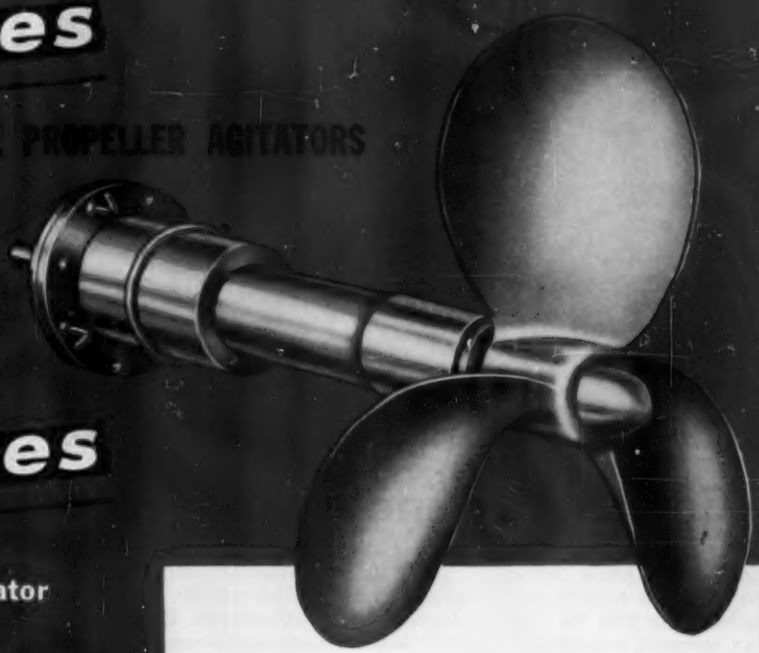
HERE'S SMOOTHLY FOLDED sample of paper just snatched from moving web. Sample can be put into weighing bottle within 3 to 5 seconds for precision laboratory work.

HOW SAMPLER WORKS

FOR THE FIRST TIME a sample of paper can be taken from a moving web on the paper machine without causing a break. Trap idea, with "V"-shape razor-sharp teeth follows direction of web and quickly snaps sample in dryer section of this paper machine at Eastman Kodak.

E.D. Jones

CARTRIDGE-TYPE PROPELLER AGITATORS



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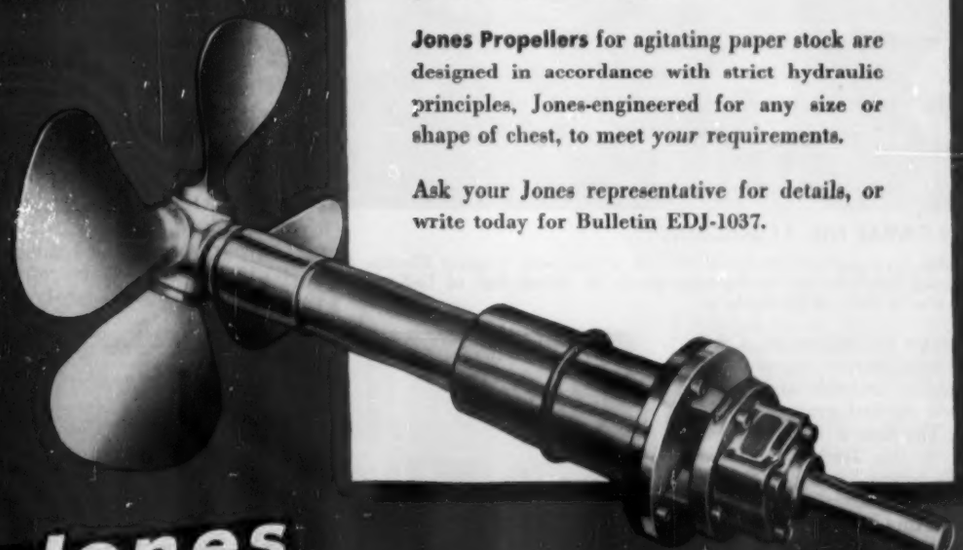

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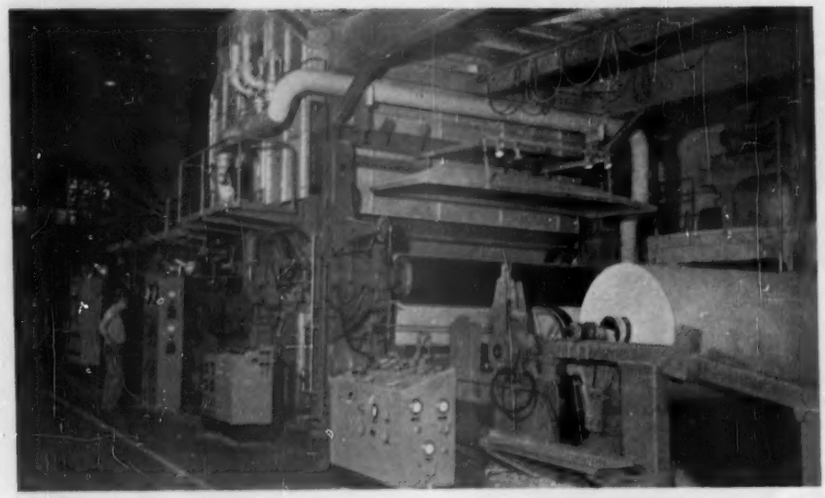


MAKING DRY CREPE

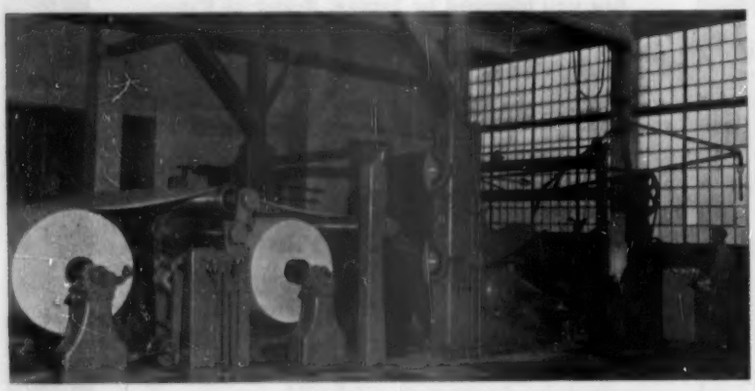
Crown Z's No. 11 Beloit Fourdrinier-Yankee machine at Camas, Wash., which formerly produced flat or semi-crepe, now makes dry crepe. Entire drying takes place at high-pressure Yankee equipped with Drew Engineering's latest design vapor absorption system, producing same tonnage as previously when machine had 13 drying rolls and Yankee.

How Camas Machine was Rebuilt for Dry Crepe

• Crown Zellerbach Corp.'s "better, softer tissue" program recently progressed another stage with the completion of an extensive rebuilding of No. 11 machine at Camas, Wash., mill to convert the machine from flat or semi-crepe to dry crepe. Crown views its trend toward improved tissues as highly desirable and has already made marked progress in that direction. The firm is increasing participation in this field by installing the world's largest Yankee machine at its St. Helens, Ore., mill.

The company started making dry crepe facial and facial-type toilet tissues seven years ago on No. 14 at Camas, which that machine continues to produce. Changing No. 11 enabled the mill to produce soft dry crepe toilet tissue, now marketed throughout the western states as "Zee Tissue."

Until last year, when the rebuilding project started, No. 11—a Beloit Fourdrinier-Yankee machine with 176-in. wire—had produced semi-crepe since installation in 1930. It now makes dry crepe at slightly over the rate it formerly produced semi-crepe tissue—60 tons or more daily.



NEW ON CAMAS NO. 11 MACHINE

Beloit double tape unwind, winder stack and winder with General Electric electric drives running Zee toilet tissue. Operator stands at control desk of G-E amplidyne-controlled winder drive at far right.

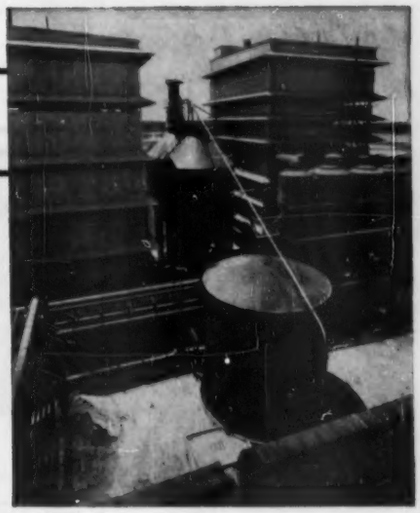
Major changes include eliminating the previously used after-dryers, installing a high-pressure Yankee equipped with a newly developed vapor absorption system, an electronic sectional drive, specially designed calender stack, tape-driven winder and pressurized headbox.

The project included improving the stock system by adding a tile-lined stock chest, by Stebbins, and equipping it with Impco propeller type agitation. The original inlet slice was converted to air-loaded type box, to maintain the same head but occupying minimum headroom, and supplied by an enlarged mixing pump and stainless steel piping system making for lower velocities.

Rebuilding the Fourdrinier included raising the table 18 in. to facilitate installing deeper saveall pans, moving the headbox ahead 11 in. to maintain same wire length, installing larger dandy-type table rolls

(Left) General Electric motor-generator set for reel, second and first calender, winder, Yankee and wet end. (Right) G-E amplidyne and exciter motor-generator set for speed control of motor drives. Sectional control panels at left tie-in entire drive system.

The AIRVEYOR DOES A JOB FOR MANY PULP AND PAPER MILLS



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Tileston & Hollingsworth
Fitchburg Paper
Escanaba Paper
Blandin Paper
Minnesota & Ontario Paper
Brown Co.
Finch-Pruyn
Newton Falls Paper
Riegel-Carolina
Chillicothe Paper
Mead Corporation
Oxford-Miami
Crown-Zellerbach
St. Helens Pulp & Paper
Scott Paper
New York & Pennsylvania
Bare Paper
Glatfelter Co.
Bowaters-Southern
East Texas Pulp & Paper
Champion Paper & Fibre
Camp Mfg. Co.
Chesapeake Corp. of Va.
Puget Sound Pulp & Timber
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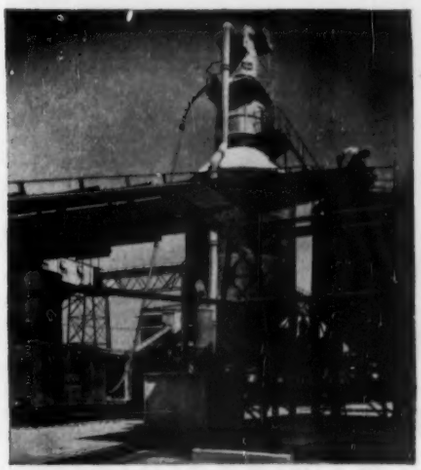

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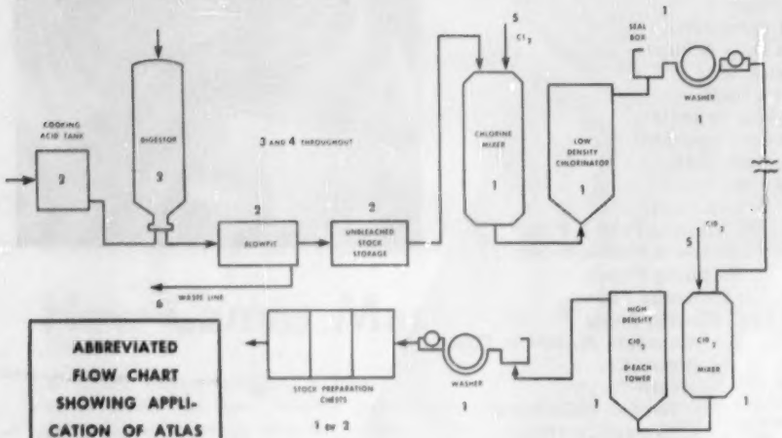

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and an open-faced couch roll and lining the wire pit with stainless steel fabricated and installed by Northwest Copper. The plain roll was replaced by a 36-in. diameter suction pressure roll to which a Roots-Connorsville 2-stage pump supplies vacuum. Diaphragm loading was added on the second press and Beloit's air-type felt guides were installed in press section.

To provide for complete drying without use of the former 13 after-dryers, the low-pressure Yankee was replaced by a new Beloit high-pressure Yankee operating at 125 psi. steam pressure. In combination with a high-velocity air-jet vapor absorption system by Drew Engineering, this unit alone has capacity equal to the previous Yankee and after-dryers combined.

An improved type Beloit creping doctor installed in conjunction with the dryer effectively contributes to softness of the sheet. A Beloit calender stack, specially designed for precision caliper control and softening cation, receives the sheet from the dryer. Paper runs vertically through calender nips, the loading thus being kept independent of roll weight.

A transfer type reel, with rope section operating only in case of start-ups and breaks, works in conjunction with a Beloit tape-driven unwind and combining stack ahead of winder.

A new General Electric sectional drive of both amplidyne and straight electronic control powers the present No. 11 machine through Western Gear reducers. A Sunday drive on the Yankee prevents localized heating during shut-downs.

CZ Camas engineering department did detail engineering on this project.

THEY SCOFFED AT PAPER SAMPLER

Continued from page 96

dryers and after wet presses. The sampler will enable them to do this. By the use of the sampler, exact drying capacity of the dryers can be found. This means more guesswork can now be taken out of speeding up of a paper machine. Many mills will find that they have extra drying capacity in present dryers and will be able to speed up without additions. This is another step in bringing papermaking from an art to a science.

This story does have a happy ending—and for John Cannan, it is a happy beginning. For at the time a PULP & PAPER editor saw him demonstrating the sampler on one of the paper machines at Kodak Park, George Lear, president of Moore & White, was there too, with a contract in his hand. Moore & White Co. will market the Cannan paper samples as soon as it can arrange to make it available.

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NEW ROADS HERE WILL AID FUTURE PULPWOOD HARVEST

Here is typical high-country drainage of heretofore untapped timber on the Lolo National Forest, west of Missoula, Mont. While the differences in coloration do not show up in this photo, much of this timber has already been attacked by spruce bark beetles and has turned brown. Roads built into this drainage this year will aid in future management and be an advantage for any large pulpwood harvest in future. (Photo by PULP & PAPER)

When Will Montana Build Mill?

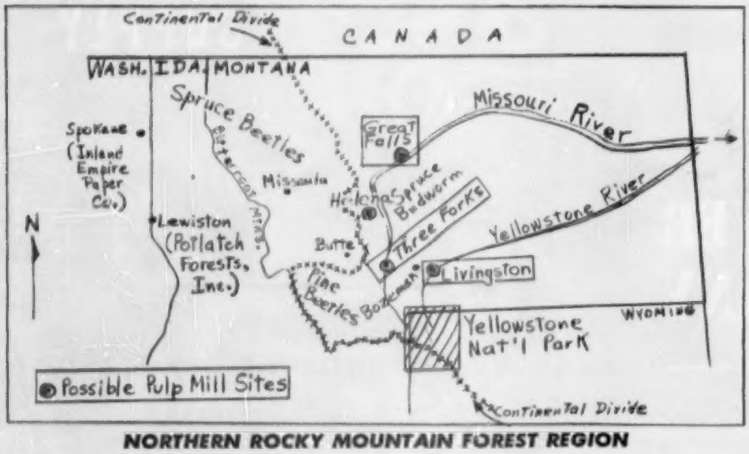
• Now that Alaska has a woodpulp industry, when will the first woodpulp mill be built in Montana and who will build it?

These two questions may very well be answered in the not-too-distant future—say, in the next few years. A PULP & PAPER field editor touring Montana this summer came up with several observations to help form a picture of the background of possible pulp development in that state.

Many large pulp and paper companies have explored the possibilities of a new pulp industry in Montana, and the situation is in a way quite similar to that existing historically in Alaska. The laws of economics are powerful factors in the utilization of timber, and such is the case here. The availability of raw material is not a factor; pulp material is not only present in vast quantities but under management, it could be greatly increased. The entire northern Rocky Mountain region has a huge capacity for timber production.

One interested industry executive told PULP & PAPER there is even more pulpwood in western Montana than the Forest Service estimates, much of it over-age and dying, and it could easily support a pulp mill in perpetuity.

The Forest Service figures stumpage costs are low, but logging and road building would add mightily to procurement costs of pulpwood. Much logging would have to stop in winter because of snow and altitude.



NORTHERN ROCKY MOUNTAIN FOREST REGION

A MILL, EVENTUALLY—PULP & PAPER met no one in the region who was not optimistic over the prospect for a pulp mill. Some people think it will come soon. Others believe the answer lies so much in the realm of economics that it cannot be tied to any timetable. Freight rates, markets—these will be influences. As in the case of Alaska, the steadily increasing longterm demand for woodpulp, new uses and new markets for it, eventually will be, perhaps, the most forceful influence. The day when woodpulp produced elsewhere is not enough, and when the profit will outweigh whatever costs are involved—on that day, no doubt, the first woodpulp mill will be built in Montana.

There is another factor to consider, too. An integrated, full wood-use operation may come first, whereby lumber, pressed board, plywood, even chemical products, might make a combined woodpulp operation less costly and more profitable.

The history of pulp and paper manufacturing in Montana is brief. Fifty years ago a group of intrepid men tried to make a go of the Manhattan Pulp & Paper Co. at Manhattan, Mont. They tried, unsuccessfully, to make paper out of straw and later from Lake States pulp.

The Inland Empire Paper Co. at Millwood, Wash. (near Spokane) and Potlatch Forests, Inc.'s new kraft mill at Lewiston, Idaho, are the only other operations in the industry in the entire northern Rocky Mountain region.

For faster pulpwood handling

...these operators can see and feel the load

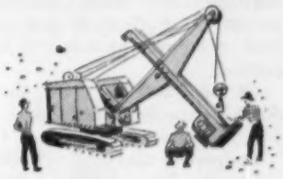
SPECIALLY ELEVATED CAB gives operator a perfect 18-ft. bird's-eye view while unloading pulp from converted LST. This added feature to these K-360 series rigs, helped operators unload 2000 cords in only 5½ hours at Canadian mill yard.

How Link-Belt Speeder extra speed and power creates a new concept of woods mechanization

WHETHER it's in a specially-engineered yard crane like this or a standard model — the operator of a Link-Belt Speeder occupies the *"most productive seat in the yard."*

Exclusive Speed-o-Matic power hydraulic control puts greater operating speed and power at his finger-tips. He grapples big loads quickly . . . handles slings accurately and safely with dependable hydraulic power all the way. He works easier, with less end-of-shift letdown.

More "live" or "earning" weight in all-welded, stress-relieved construction puts more usable horsepower to work. Independent rapid boom hoist speeds loading, lets operator serve larger areas and handle more wood without moving the machine. Self-compensating, two shoe clutches require less maintenance. And finally, fast front-end convertibility makes any Link-Belt Speeder rig your best *working investment* for *all* types of yard or woodlands operations.



IMPORTANT NOTE TO SHOVEL-CRANE BUYERS

Link-Belt Speeder is on the march with a number of NEW machines for light-to-heavy-duty tasks. Investigate the New LS-98, LS-88, LS-68 and LS-58 in addition to popular K-300 and K-500 rigs. Your Link-Belt Speeder Distributor has complete data. 13.000

LINK-BELT SPEEDER CORPORATION, Cedar Rapids, Iowa

LINK-BELT SPEEDER

BUILDERS OF A COMPLETE LINE OF CRAWLER, TRUCK AND WHEEL-MOUNTED SHOVEL-CRANES

TOUGH LOGGING IN MONTANA FOR WISCONSIN MILLS

Here's an Allis-Chalmers HD-15 crawler tractor with a Baker Gradebuilder building a logging road in Gallatin National Forest in Montana. Three Wisconsin kraft mills get wood from here. In winter logging must shut down when snows get high.

BIG LOGS RIGHT OFF ROAD

Here a jammer crew loads out right-of-way timber on a timber access road in the Kaniksu National Forest of Northern Idaho. FS experts say there is enough wood available in northern Rocky Mountain region to supply several pulp mills. (Photo—U. S. Forest Service)

WHAT USFS REPORTS—The Forest Service, which administers most of Montana's commercial forest land, has worked up some rather complete studies on the feasibility of pulp mills in "eastern" Montana and is currently collecting data on "western" Montana. The dividing line between east and west here is the Continental Divide, so the "western" area is really only a comparatively small northwestern portion of the state.

Eastern Montana is particularly adaptable to a pulp industry because 44% of the forest land, or 4,100,000 acres, is potential pulpwood land. Under management, this acreage would produce over 1,000,000 cords of timber per year in perpetuity, says the USFS. This annual growth would amount to 0.25 cords per acre per year, a figure which is low by comparison.

Of the 1,000,000 cords, the breakdown by species is as follows:

Species	*Cords*
Lodgepole pine	650,000
Douglas fir	227,000
Spruce	89,000
Alpine fir	39,000
Other species	33,000
TOTAL	1,038,000

Lodgepole pine pulpwood has been going east for many years from the area around Bozeman, Mont., where the Corcoran Pulpwood Co. is cutting on national forest and private land, about equally.

Three Wisconsin kraft mills pulp the lodgepole; they are Mosinee Paper Mills at Mosinee; Nekoosa-Edwards Paper Co. at Nekoosa; and Thilmany Pulp & Paper Co. of Kaukauana. They sponsored the Corcoran company in Montana several years ago. It is higher cost wood for them. Some years they take more than other years, if the need is great and the cost, therefore, doesn't matter as much.

Thilmany also has a separate operation of its own in the West Yellowstone country where it has logged trees as old as 135 years. Much overage lumber is here.

Lodgepole pine of eastern Montana could also be used in sulfite and mechanical pulping, according to the USFS, but so far has been used commercially only in kraft. It is said to make a bleached pulp of high strength and good color.

FOR U. S. FOREST SERVICE IN MONTANA

PERCY D. HANSON (left), Regional Forester, a native of New Brunswick, was in Calif., before taking over Missoula post.

ALEX LINDH (middle), Asst. Regional Forester and spearheading efforts for pulp and paper development. Born in Oregon, graduated from Oregon State, served Ted Tinker of APPA in Wisconsin for USFS.

BLAIR HUTCHINSON (right), late of Missoula station, now at Ogden, who has prepared many studies on pulpwood potentials of Montana. Pictures by PULP & PAPER.

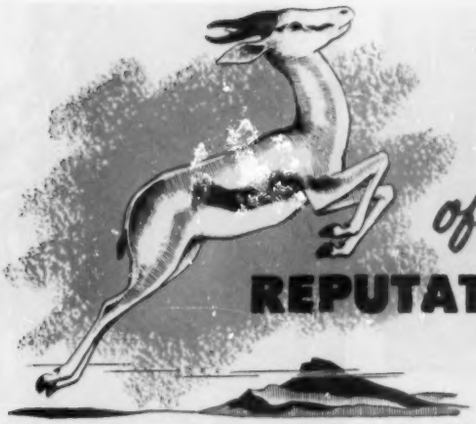
THREE SITES FAVORED—Three "eastern" sites have been mentioned as the strongest possibilities for pulp mills: Three Forks, Livingston and Great Falls. Water and pollution studies by public agencies indicate that kraft mills can operate safely there (headwaters of the Missouri) but stress that the margin of safety is slim and would require close watch.

Western Montana with an already developed sawmill economy, also offers vast amounts of mill leftovers, most of which are now burned. In fact the USFS told PULP & PAPER that an estimated 2000 tons of leftover material is available at railheads daily throughout the region.

MONTANA CHIPS TO POTLATCH—Potlatch Forest's bleached kraft pulp and foodboard and container mill now obtains chips via rail-car from Missoula, where Montana Hardboard Co.'s new chipping plant converts local planing mill leftovers into profit, even though the rail haul is nearly 300 miles. This firm plans to erect a new hardboard plant adjacent to its currently operating chipper. Raw material costs would be extremely low.

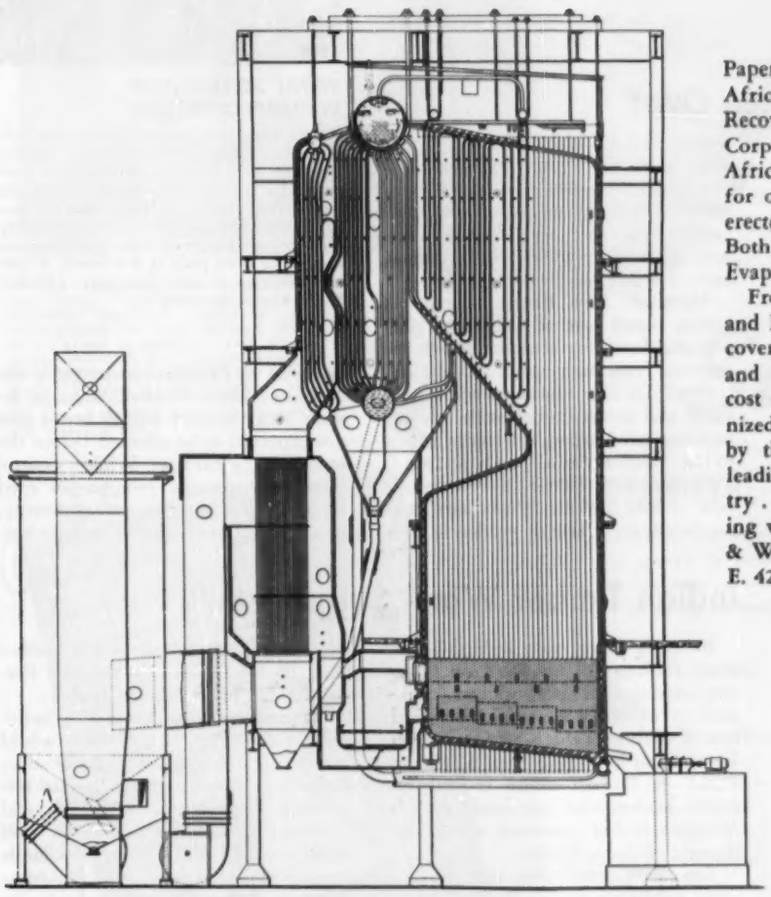
While the USFS has not yet announced its data on western Montana, Assistant Regional Forester Axel G. Lindh, who heads up national forest timber management activities for the northern Rocky Mountain region, told PULP & PAPER that the water aspects constitute a major hurdle.

Lack of access roads is another big problem but one which is being partially solved by the spruce bettle control roads. Little extra stumpage area need be sold because much pulp-



The SPRINGBOK, national emblem of South Africa.

# of B&W Recovery Units REPUTATION GOES A LONG WAY ...to South Africa



200-Ton B&W Recovery Unit with B&W Cyclone Evaporator for Outdoor Installation in Zululand.

Paper Industries, Ltd. of Springs, South Africa, have been operating a 75-ton B&W Recovery Unit for several years. Union Corporation, Ltd. of Zululand, South Africa, have ordered a 200-ton B&W Unit for outdoor installation; it is now being erected. This represents a repeat order. Both units will have B&W Cyclone Evaporators.

From Oregon to Florida, to Zululand and Finland, the reputation of B&W Recovery Units for highly efficient chemical and heat recovery, reliability, and low-cost operation and maintenance, is recognized. It is a reputation firmly established by the performance of B&W Units in leading mills throughout the paper industry . . . a reputation that is rapidly reaching world-wide proportions. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX

P-771

BEETLES BEAT ROADS HERE

No roads to speak of were built into Montana spruce stands, such as this one, until after the recent bark beetle infestation was well underway. Much of any potential pulpwood logging would depend upon construction of well-organized road systems for protection and management. (Photo—U. S. Forest Service)

WHAT BEETLES AND WOODPECKERS DID

Here's what a Montana spruce tree looks like after attack, first by bark beetles, secondly by hordes of woodpeckers. Cork cambium is girdled by beetles, killing the tree. When birds go after beetles, they riddle the bark and tree dries out quickly, checking so badly that its usefulness for lumber or even pulp is shortened. A control program is now underway. (Photo—U. S. Forest Service)

wood material could come from timber sales now made primarily. The logging for both end products could go hand in hand.

Where Bugs Have Taken Over

Throughout Montana, a tremendous reserve supply of timber lies in the dead and dying trees, victims of past and present insect infestations. While it is not concentrated, enough dead and cull timber is available in eastern Montana to nearly support a 500-ton mill for 20 years. Bug-killed timber generally loses its potential as lumber comparatively rapidly, while its pulp potential may remain for decade upon decade.

Here is the status of some of the heavier insect attacks on Montana timber in recent years:

Spruce Budworm. In the area east of Helena, an attack has been going on in scattered areas for the last 25 years. It is moving primarily westerly, across the Continental Divide, and already has done some killing in eastern Idaho. Foresters have fought this attack with spray planes for two years; they sprayed 168,000 acres near Helena in 1953. Two million acres are infested.

Mountain Pine Beetle. About six billion board feet of lodgepole pine has died from this attacker, which hit the area from Butte south to the Continental Divide. Status now: Mostly snags and down timber with few remaining good trees; extremely costly to log. Much material partly rotted.

Spruce Bark Beetle. Severe windfalls of four and five years ago have produced an attack of epidemic proportions on Engelmann spruce in the Northern Idaho-Western Montana region area. Several billion board feet are expected to be affected before the epidemic subsides. While control through a gigantic program of road building and logging is underway, much valuable sawtimber will be lost.

PLANNING A BEETLE BATTLE

Three "bug" experts confer on plans to control bark beetle in Northern Idaho and Western Montana. L. to R.—DAVID SCOTT, entomologist; GEORGE DeJARNETTE, specialist on diseases; and JAMES EVENDEN, in charge of the forest insect station at Coeur d'Alene, Idaho. All are members of FS Region, which has been hard hit by insects for several decades. (Photo by PULP & PAPER)

Indian Timber Won't Support Mill

Recently there were published reports stating that Southern oil interests were considering building a pulp mill to utilize 92-million-odd board feet of timber on the Blackfeet Indian Reservation in north central Montana. PULP & PAPER asked several industry leaders who are familiar with Montana timber resources what they thought of the prospects.

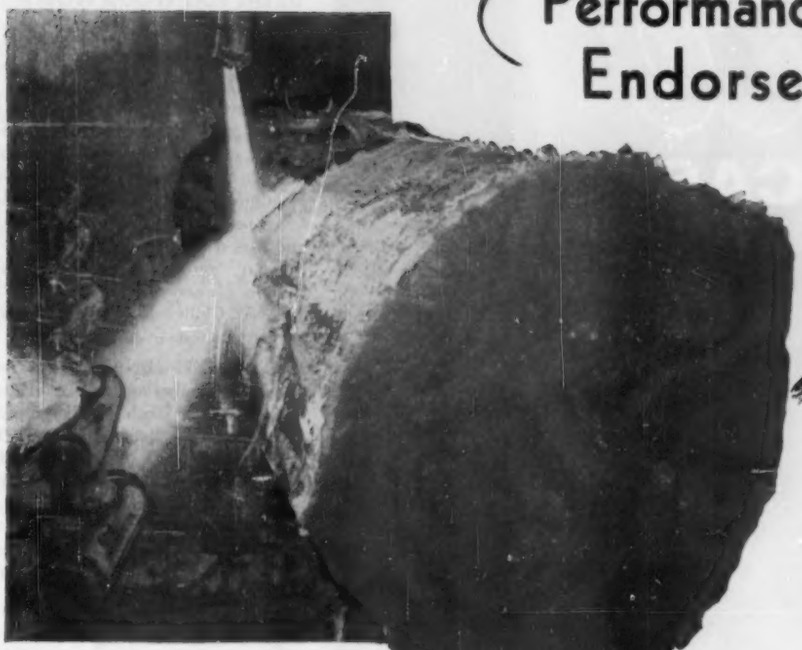
Ben R. Cancell, who recently became president of Rhinelander Paper Co., told PULP & PAPER: "It does not appear to me as though the quantity of timber available is of any consequence so far as it being a source of supply for a pulp mill. The 92 million board feet will last only for a very few years for an operation of any size."

Mr. Cancell further states that he believes any future pulp mill would utilize national forest timber, rather than Indian timber. He said the Forest Service has adequate timber.

"If someone is contemplating building a mill in that vicinity, they would require a tremendous volume over and above what is on the Indian reservation to produce a sustained yield sufficient to operate a 200-ton mill economically," F. G. Kilp, woodlands operations manager for Nekoosa-Edwards Paper Co., said.

F. N. Fixmer, forest manager for Mosinee Paper Mills Co., agreed with the others, saying the volume was too little for even a small operation. He added, "On the other hand, there may be tributary sources of stumpage which could add considerably more volume to the potential supply and such a possibility could change the picture materially."

Performance Wins Endorsement!



The Union Lumber Company, Fort Bragg, California, a major Redwood operation, compared the performance of over sixteen different types of barking installations before selecting the Sumner BELLINGHAM-type HYDRAULIC LOG BARKER here shown debarking an 8' diameter Redwood log. (Note how the size of this log dwarfs the nozzle and water action.)

Sumner

BELLINGHAM-TYPE HYDRAULIC LOG BARKER

SUMNER BELLINGHAM-type HYDRAULIC LOG BARKER performance has proven its superiority over all other barkers . . . regardless of log species, size or irregularity of surfaces to be barked . . . including Redwood, Cedar and Eucalypti.

For PULP MILLS

LARGE Handles logs up to 24' in length and diameters up to 72".

MEDIUM 24' lengths — 60" diameters.

SMALL 10' lengths — 42" diameters.

For SAWMILLS

LARGE Handles logs up to 44' in length and diameters up to 10'.

MEDIUM 24' lengths — 60" diameters.

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Since 1892
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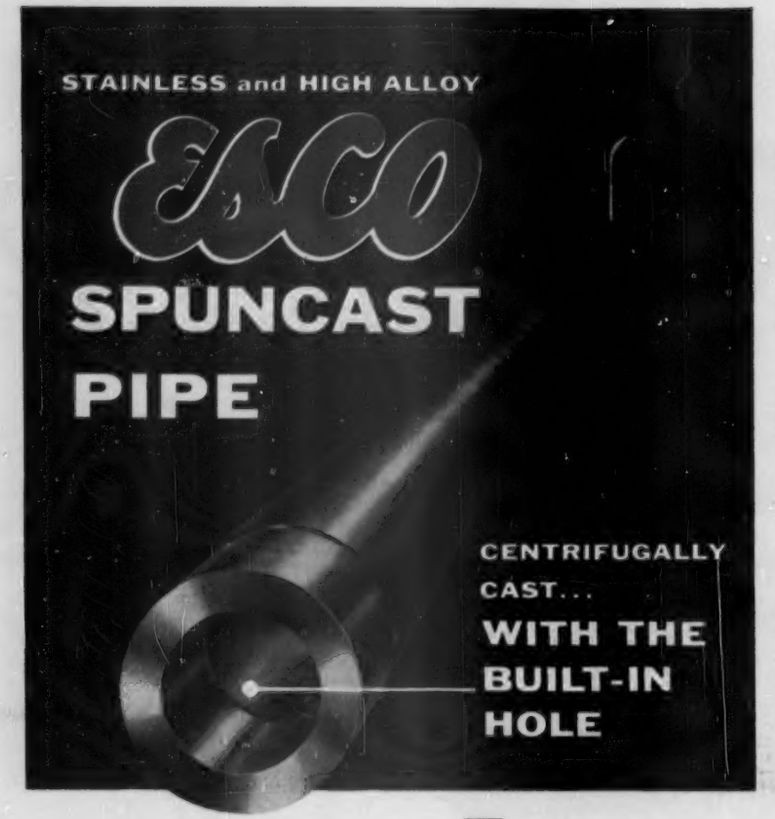

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3 Homogenous Structure Assured because rotation of mold assures well fed pressure head during solidification. Light inclusions accumulate on the inside surface and can be easily removed.

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5 Lower Over-All Cost—centrifugally cast—with a built-in hole—Spuncast requires very little machining, almost eliminates the cost of waste metal.

Write for free booklets "How To Cut Costs With ESCO Spuncast" and "A. C. I. Standard Designation Chart . . ."

These booklets can help you cut costs on hollow, circular or cylindrically shaped products. Send for them today!

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PULPWOOD SECTION

IN THE PULPWOOD WORLD
Bruning in Mead Post; Puhn is Simpson Mgr.

HAROLD BRUNING, wood buyer since 1951 for Chillicothe, O., mill of The Mead Corp., is now new district forester in charge of 35,000 acres of Mead woodlands in the Southern Michigan peninsula. Headquarters are Newberry, Mich. An Ohio native, Mr. Bruning received b.s. and m.s. degrees in Michigan's School of Forestry, and attended Wisconsin and Purdue. He serves under **W. H. HILDEBRAND**, Chillicothe, O., Mead's northern wood procurement mgr.

H. O. "BUD" PUHN has been promoted to land and timber mgr., Simpson Logging Co. at Shelton, Wash., in charge of many details formerly handled by **GEORGE DRAKE**, retired Simpson v. p. Mr. Drake and **CLYDE MARTIN**, retired Weyerhaeuser forest counsel, have opened a joint office in Puget Sound Bank Bldg., Tacoma, Wash., and will operate as forest consultants. Both are former presidents of Society of American Foresters.

Big Forests Meeting Draws Many to West

Pulp and paper executives, among those planning to attend, will hear of the vital role of forests in national and regional economy at the Western Forestry and Conservation Assn. 45th annual conference Dec. 8-10 in San Francisco.

This conference is to deal with water, soils, mining and forests; forest bank loans, Alaska outlook, tree farming, forest pests, recreation and grazing. Douglas McKay, secretary of the interior, is to deliver an address.

Budworm Sprayers Win Battles but May Lose 'War'

Another million acres of budworm-infested forest in New Brunswick will be sprayed from the air next spring, according to directors of Forest Protection, Ltd., representing Bathurst Power & Paper Co.; New Brunswick International Paper Co., Fraser Companies and the government.

Total expenditures for spraying in the last two years were about $3,500,000, covering 3,000,000 acres. Improvement in technique has brought a cost reduction.

Dr. R. E. Balch, of the Canadian forest biology laboratory in Fredericton, N.B., says spraying has kept alive considerable areas of forest that would now be dead or dying but the final outcome is in doubt. The budworm infestation in New Brunswick now covers 13,000 square miles.

Rayonier Establishes Stake in Canada

Rayonier, Inc., has reached into the Far Northwest to establish its first stake in Canada through acquisition of a controlling interest in Alaska Pine & Cellulose, Ltd. Representing about $20 million and 80,000 shares of stock, the deal may take some time to complete.

Douglas Ambridge, president of Abitibi Power & Paper, who is chairman of the Alaska Pine board, and Walter C. Koerner, president, will continue as directors, according to Rayonier President Clyde B. Morgan. Walter Koerner continues as president of Alaska Pine. Paul E. Roberts, top executive officer at Alaska Pine in Vancouver, B. C., will continue as vice president and general manager.

A variety of reasons have been offered for the deal:

1. Rayonier wanted the timber. Alaska Pine & Cellulose holds some 8 billion ft. of timber in British Columbia by license or lease.

2. Rayonier has long desired to get a foothold in Western Canada.

3. Abitibi, which had concentrated on Eastern Canada until its venture with Alaska Pine, was reported not particularly interested in lumber, which was of course one of the primary concerns of the Koerners and always had been.

4. Abitibi will use its share of money from the sale for retirement of outstanding debentures to enable Abitibi to increase its common share divident payments.

5. Recognition by Alaska Pine that additional capital was soon required for expansion of its two pulp mills.

6. Belief that Alaska Pine will greatly benefit through the research facilities maintained by Rayonier.

Bill Campbell and Wife Die in Plane Crash

Friends of William W. (Bill) Campbell, Jr., vice pres. of sales, Lockport Felt Co., and his wife, were shocked to hear of their instant death in the crash of the company's Beechcraft plane near Middletown, Conn., Oct. 29. The pilot, Don Goodridge, also was killed. They were flying from LaGuardia field to New Haven, Conn.

Son of a former president of Lockport Felt, Mr. Campbell was a director since 1946 and headed sales since 1952. A graduate of Hobart College, he served with the Seabees in the war. The Campbells were married in 1948 and two adopted children survive.

New Pulping Process Developed in Sweden

A new process for making sulfite pulp from pine instead of spruce has been developed by Stora-Kopparberg Corp's. Skutskär mill in Sweden, according to George N. Dutcher, vice president of their American subsidiary. This difficulty in dissolving pitch in the heartwood has been solved by using a two-stage cooking method on a basis of sodium bisulfite.

Pulp from this process is said to be light in color, with very strong fibers and to have excellent printing properties. Production costs using pine are cheaper than spruce and part of an increasing surplus of pine in the Dalälven district may be used.

So certain are they that results in full production will equal tests to date, that they have definitely decided to divert sprure to their newsprint mill as soon as another newsprint machine can be built, and convert the Skutskär mill to the new process by mid-1955. It will mean an increase of 40,000 tons of newsprint.

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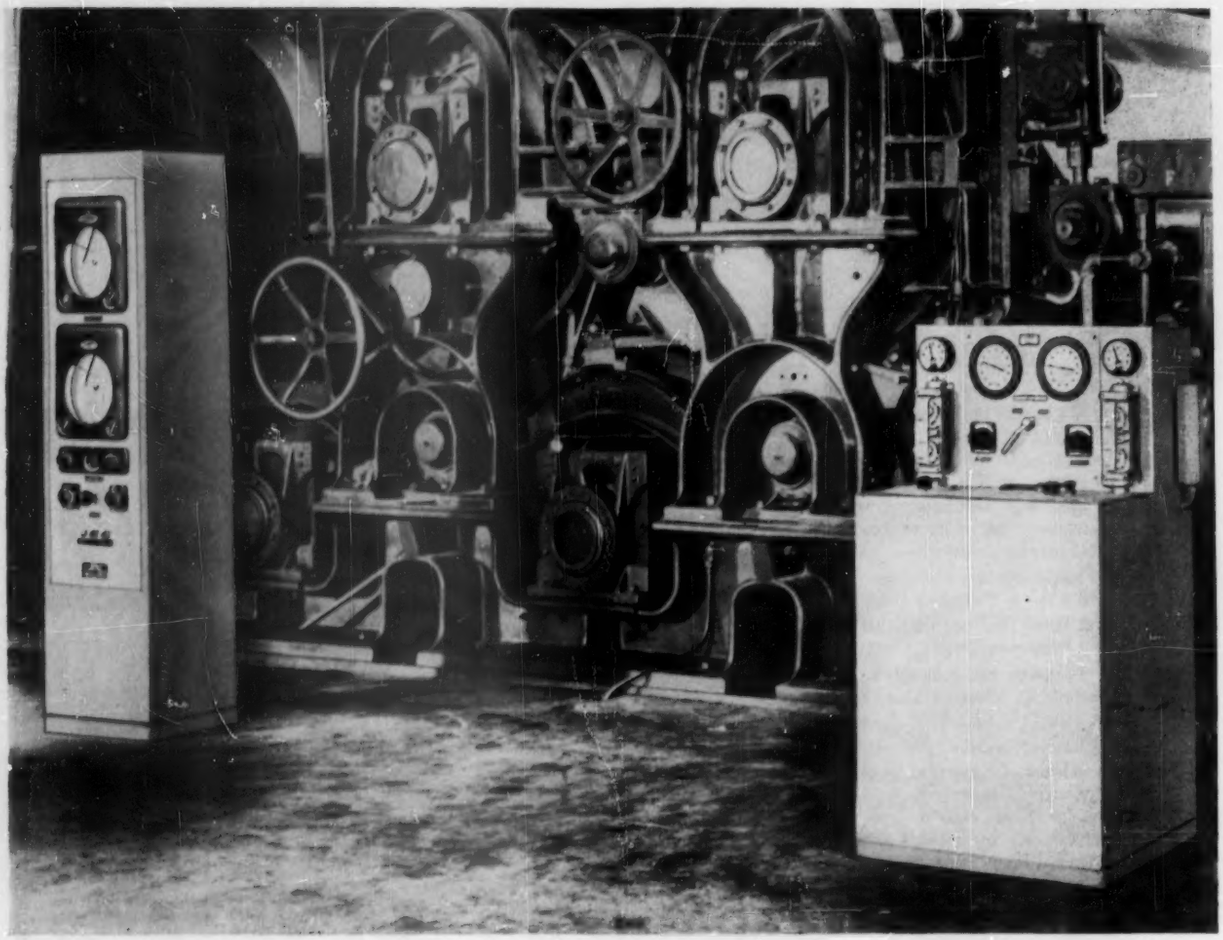
Over 2,500,000 Clinton Gasoline Engines Now In Use Throughout The World!



Increases Tonnage 10% with New

A mill that manufactures dissolving pulp reports, "We've increased our pulp tonnage by 10% since installing a Masoneilan Moisture Control System. And we've cut rejects due to incorrect moisture from 10% to 1%." Another mill manufacturing board claims, "Our production is up 7% a day with Masoneilan's New Moisture Control System."

And that's just part of the story. Typical of many other paper manufacturers of all kinds using Masoneilan Controls, these mills are now making a *better, more uniform* paper at *lower cost* with the versatile new Masoneilan Moisture Control System. Here's how and why:

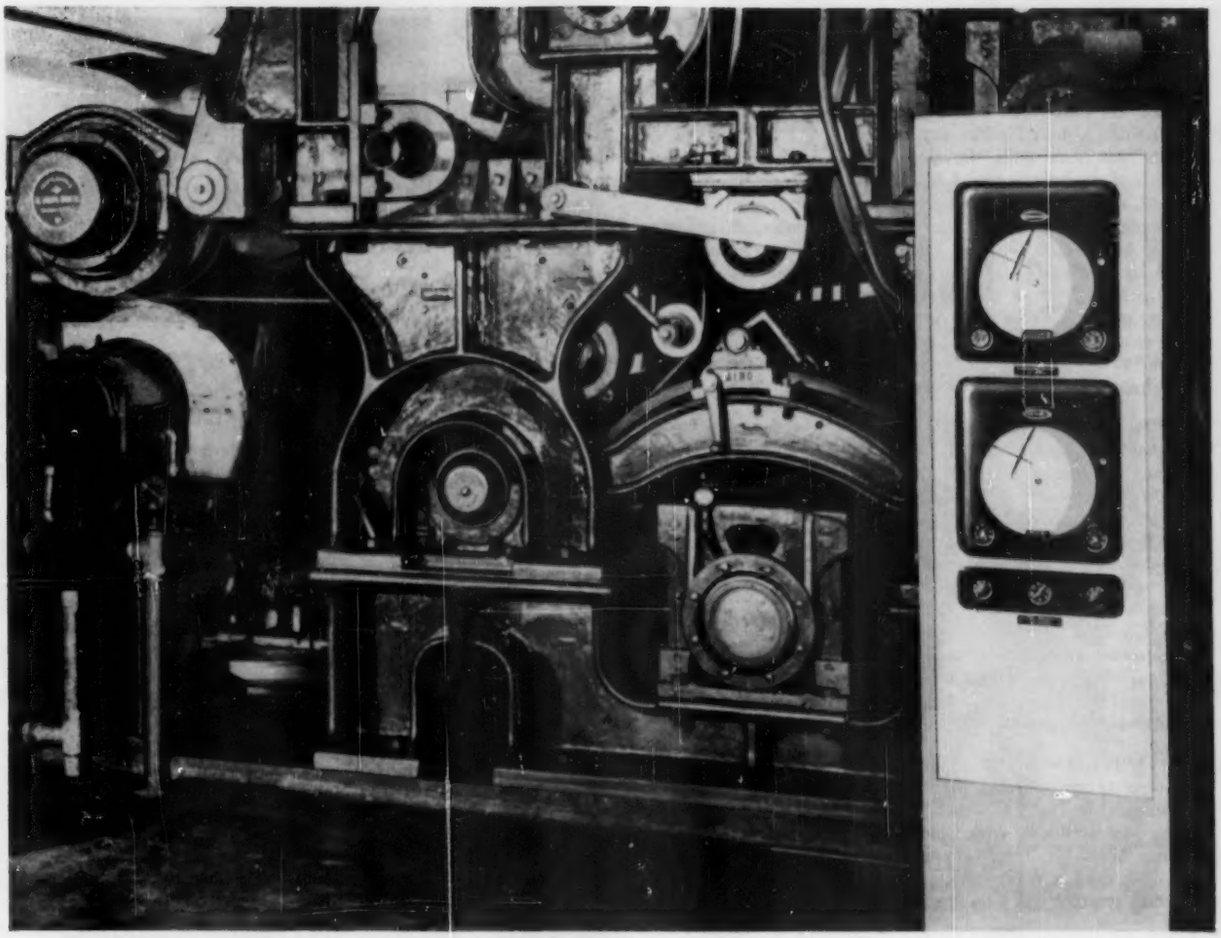
A Masoneilan Moisture Control System maintains an average moisture content across the sheet. Does not rely on "spot" measurements.

It controls moisture content at each of several points on the machine — from as high as 50% to as low as 3%.

Sensitive yet stable, it holds moisture content accurate within ±½ of 1%.

Can be used for any speed machine — any width machine. Is suitable for *all* grades or weights of paper.

Provides individual pneumatic break control at each control station. Cuts downtime due to dry breaks . . . speeds recovery since it automatically handles steam to machine under all conditions.



Masoneilan Moisture Control System

Eliminates human errors — makes for more uniform sizing and coating. Pays for itself in a very short time — in some cases in less than a week.

Points up machine troubles such as improper drainage, variations in sheet finish, changes in press operation, freeness, consistency, felts, or air removal.

If you're not presently using it, you'll want to know more about what this versatile Moisture Control System can do for your mill. Drop us a line and we'll send complete information.

CONTROLS MOISTURE CONTENT AT . . .

- Breaker Roll
- Single or Multiple Dryer Sections
- Size Tub
- Coating Press
- Reel

Masoneilan Moisture Control System is manufactured under Mason-Neilan Patent No. 2,659,987 Dated November 24, 1953.

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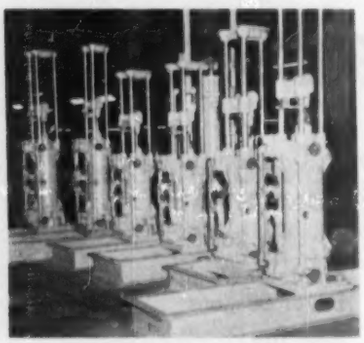
SHARTLE BROS. DIV. of Black-Clawson Co. has introduced a new type of stock refiner, a design unlike any refiner now in American mills. Developed in France and recently acquired by Black-Clawson, the new "Alligator Refiner" has seen some 150 installations abroad. According to European claims, and confirmed by a B-C testing program, the Alligator is said to be particularly outstanding with respect to fiber control and power economy. Data on pilot plant findings and design information may be obtained from Shartle Div., Middletown, O.

WELCH MANUFACTURING CO., Springfield, Ill., announced a new roll balancing machine, called the "Raydyne Balancer," for locating and correcting whip or unbalance in rolls, armatures, gears, flywheels, pumps and other rotor equipment. The new machine has capacity up to 30,000 lbs., with 30 ft. between bearing centers, and balances for speeds up to 4000 fpm. The balancer uses electronic-stroboscopic principles sensitive to whip and vibration and locating quickly position and degree of unbalance. Literature available on request.

OHIO INJECTOR CO.'s William G. Shepard is its new general sales manager, as announced by Harry G. Smith, administrative vice president. With Ohio Injector since 1945, Mr. Shepard worked in home office sales at Wadsworth, and field sales, and recently was Chicago division sales manager.



PUTS STOPPER ON AIR LEAKS

Sumner Iron Works (Everett, Wash.) Research and Development Dept. has developed these new "Air Miser" air cylinders (part of an order for 13) for Rayonier's cellulose mill at Port Angeles, Wash. The new cylinder consists of top and bottom head, cylinders barrel, piston and rod. Valves on top and bottom head control cylinder through air ports. Heads contain exhaust cushion plugs. Piston is packed with Neoprene cups to prevent air leakage around cylinder.

A Top Westinghouse Man And Southeast Mgr. in "Swap"

K. M. Patterson, industrial manager, Westinghouse Electric Corp., East Pittsburgh, Pa., and A. W. Rose, Southeast industrial sales manager, Atlanta, Ga., are now back at their respective desks, after trading jobs for a few months. This is a custom of Westinghouse executives, to broaden their experience.

Mr. Patterson, at the Philadelphia Engineering Conference, told PULP & PAPER, industrial growth in the Southeast is continuing at an amazing pace.

Moore & White Ties In With Butterworth Co.

To continue production of its present lines and its new products, Moore & White Co., Philadelphia, has contracted with H. W. Butterworth & Sons Co., in nearby Bethayres, Pa., to manufacture its products.

George A. Lear, president of 69 year M & W, said Moore & White sales and engineering staff is being expanded in line with this policy.

The transfer of manufacturing processes to Butterworth, he said, will result in production economies.

Butterworth recently completed a new plant addition and installed over $300,000 worth of new machine tools. These facilities have been made available to machinery manufacturers who want to retain their own sales organization. Butterworth will provide engineering services if desired.

SYNTRON CO., Homer City, Pa., offers a new condensed catalog No. 5311, available on request from home office address or local agents. This lists such products for this industry's use as electronic vibrators, hopper controls, vibratory feeders, shaft seals, heating panels and power conversion units.

GULF OIL CORP., Pittsburgh, Pa., has announced availability for showing of a new color slide film, "Gears and Their Lubrication." The film is designed for benefit of operating personnel, showing how gears may be protected against wear and damage, and through use of fewer grades of lubricants. Gulf Oil will provide projection facilities, and arrange date for showing on written request to: Gulf Oil Corp., 1822 Gulf Bldg., Pittsburgh 30, Pa.

CARPENTER STEEL CO., Union, N.J., has a new complete description of sulfuric acid resistant Carpenter Stainless No. 20 and No. 20-Cb in a revised catalog issued by its Alloy Tube Division, available on request.

DOWNINGTOWN OFFICIALS

L to r: ENRIGHT A. ELLIS, President of Downingtown Mfg. Co.; and U. GRANT LEFEVRE, Vice Pres. and Treas., and FRANCIS J. FITZPATRICK, Vice Pres. and Sales Mgr., of Monarch Forge & Machine Works, Portland, Ore., purchased by Downingtown, to better serve Pacific Coast pulp and paper industries.

To Make Downingtown Machinery in Far West

Important event for Pacific Coast pulp and paper industries is acquisition of the 44-year-old Monarch Forge & Machine Works and its manufacturing facilities in Portland, Ore., by 74-year-old Downingtown Mfg. Co., Downingtown, Pa.

Enright A. Ellis, Downingtown president, announced Monarch's plants with 110 employes will enable Downingtown to better serve Pacific Coast pulp and paper and board mills. Monarch also makes sawmill and other special machinery. U. Grant LeFevre has become vice pres. and treas., and Francis J. Fitzpatrick, vice pres. and sales mgr., of the Downingtown subsidiary.

John V. Roslund, Pacific Bldg., Portland, Ore., represents the Downingtown enterprises to Pacific Coast mills.

BULKLEY, DUNTON PROCESSES, INC., 295 Madison St., New York 17, N.Y., offers an 8-page catalog, "Colloidair Systems for Recovery of Suspended Materials, Waste Water Treatment, etc."

T. B. WOOD'S SONS CO. offers Bulletin 497 describing its new single wide range belt variable speed drive. Shows how to design and select drives for 1 to 20 hp motors. Write the co., Chambersburg, Pa.

YARNALL-WARING CO. has moved Midwest sales offices to larger quarters at 549 W. Washington St., Chicago 6, Ill., Room 308, Machinery Hall Bldg. A. M. Ritter, Chicago district manager, has a strengthened sales staff by addition of Mitchell Carson, Ray Peterson and Gordon Wagner, all factory trained men.

Correction—

A picture caption in Sept. issue of PULP & PAPER, page 73, under a photo of Oxford Paper Co.'s new hardwood kraft bleach plant at Rumford, Me., obviously should have stated that high brightness is reached "*without* degradation or loss of fibers (instead of *with*)." We regret this error.

for economical REJECTS refining

DRYDEN PAPER COMPANY

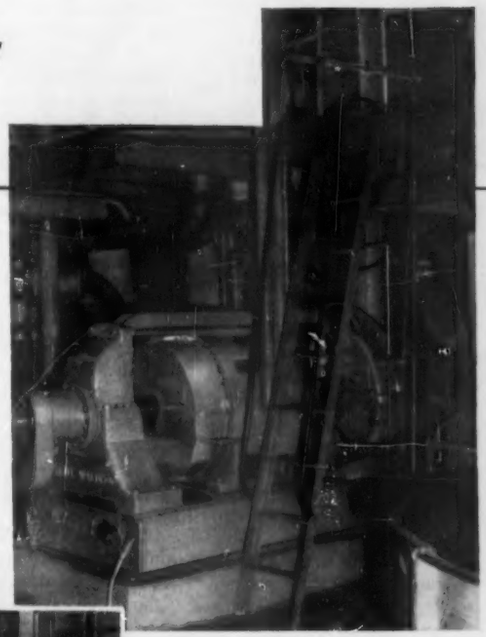
chooses a

SPROUT-WALDRON

36-2 REFINER

and an S-W

FEEDING SYSTEM



The Sprout-Waldron 450 HP Refiner at Dryden Paper Company, Ltd., Dryden, Ontario refining kraft knots and rejects. A considerable reduction in horsepower requirements is reported over previous pulping, with much superior refined pulp quality. S-W offers refiners and efficient, complete feeding, conveying and dewatering equipment in one "package" . . . with one contract . . . one responsibility.

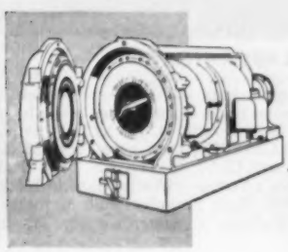
Single disc design, peripheral control ring and rugged construction for...

high pulp quality
flexibility of operation
high capacity
low maintenance

The SPROUT-WALDRON refiner is the leading producer of high yield kraft pulp

For more information on semi-chemical pulping, or any other pulping application, send for our file of technical and practical data. Write to Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pa.

S W



for your pulping problem—

SPROUT-WALDRON

PULP REFINERS

961

NEW V.P. AT BLACK-CLAWSON

TANY AGRONIN moves to New York City from Middletown, O., as new Vice Pres. and Gen. Mgr. of B-C's newly acquired Pandia Div.

Black-Clawson Purchases Pandia, Inc.

Acquisition of Pandia Inc. of New York City by Black-Clawson Co., Hamilton, O., is announced by Frank T. Peterson, executive vice president of Black-Clawson Cos.

The Pandia Division, in addition to its continuous digester and Brammer recording consistency control, will supply pulp mill washers, pumps, valves, agitators, batch digesters, bleach systems, towers, and mixers, screens, etc.

The Pandia engineering staff will be equipped to provide a complete pulp mill, it was announced.

Use of the Pandia continuous digester has spread rapidly through felt, and insulating board fields, and into corrugating and bleachable grades of pulp.

Tany Agronin has been appointed a vice president of The Black-Clawson Co., and general manager of the Pandia Division. He has been with Black-Clawson 17 years, in engineering and sales phases, recently as chief engineer of the Shartle Division.

L. G. Durant, with Pandia since 1945, will continue as a vice president, in charge of sales of pulp mill equipment. Dr. Joseph E. Atchison, vice president of Parsons & Whittemore, Inc., and Dr. John N. McGovern, formerly of the Forest Products Laboratory, Madison, Wis., have joined the Pandia board of directors.

Figured in Brown-International Deal

A key figure in the sale of Brown Co. Canadian properties to International Paper was D. Samuel Gottesman, president, Central National Corp. and also president of Gottesman & Co., Inc., director of Rayonier, Inc., and Eastern Corp. A commission of $200,000 was to be paid to Central National. Also assisting was Arthur Ross, vice president, Central National and director of Rayonier.

CORRECTION—In our October 1954 issue the wrong title was given to Rodolphe Paradis, who is properly Assistant to the Resident Manager of the Kenora mill of Minnesota and Ontario Paper Co., E. E. Crandall is Resident Manager of the mill.

Sets World's Record Service Call

BURKE MORDEN —who sets what may be world's record for a service call

Probably the longest, and comparatively, fastest, service call ever made by an American manufacturer of paper mill equipment was completed recently by R. Burke Morden, president of Morden Machines Co.

He flew from Portland, Ore., his business home, to Tel Aviv, Israel, in several hours less than three days, sleeping one night in a Rome hotel en route. Actual hours in air from Portland to Israel and back to New York were 80 hrs., and elapsed time was just about one week.

The new American Israeli Paper Mills, of Tel Aviv, in which owners of Hudson Pulp & Paper Corp. in U.S. have a substantial interest, is now making about 50 to 75 tons a day of newsprint, printings, sulfite papers and multiwall bags. It makes groundwood, and is experimenting with straws, etc. It buys sulfite from Scandinavia.

"Israel is reforesting former unproductive areas all over the country with pines," said Mr. Morden.

The new mill uses 5 Morden Stock-Makers in series and two E. D. Jones jordans ahead of the British Bertrams machine. A Cameron winder follows.

Manager is Robert Zion, formerly manager of Hudson P & P's Lansdowne, Pa., mill, which it sold. Half a dozen machine crew men from U.S. are with Mr. Zion, training local workers.

How Kimberly-Clark Has Grown

Kimberly-Clark's annual report predicts that its financial results for its 1954-55 fiscal year (ends Apr. 30) "should about equal" those of 1953-54, when sales totalled an all-time record of $177,281,400 (8.3% over previous year) for 203,247 tons of cellulose wadding products and 302,817 tons of book, specialty and fine papers. A decade of expansion has tripled sales from $56,000,000 at the war's end.

Repeal of the excess profits tax will favorably affect the '54-'55 year's earnings, it said, but increasing costs and wage increases have occurred, and "there is some uncertainly of continuation of present demand for our various products." Earnings were $11,105,392 for '53-'54 year, 6.16% of total receipts.

K-C spent $3,896,506 for property, plant and equipment in the past year. At Munising, Mich., a paper machine was rebuilt, and impregnating equipment added for industrial papers. At Kimberly, Wis., a new warehouse was added. Also completed or in process are added capacities for paper and wadding machines at 4 mills, new wood preparation and handling equipment at two mills, new digesters at two mills, water towers at two mills, a new boiler at one, and new office at another.

OPEN NEW $240,000 RESEARCH LABORATORY

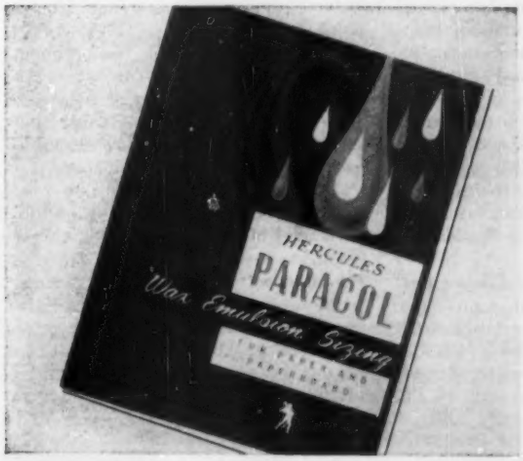
MacMillan & Bloedel at Harmac, B. C., opened its lab, with a complete pilot pulp mill, in presence of British Columbia's Premier Bennett and other officials and guests. Left to right: L. G. HARRIS, Res. Mgr., Harmac Mill; R. G. KIRBY, Price & Pierce Ltd., Montreal, pulp sales firm; CLIFFORD CRISPIN, Pulp Vice Pres., M & B; W. B. McGOLDRICK, Price & Pierce, New York, and C. W. E. LOCKE, M & B's Pulp Gen. Mgr. Chairman H. R. MacMillan said Harmac's 7-stage chlorine dioxide bleached kraft sells in 8 or 9 countries of Europe. Electric Steel Foundry built a rotary digester, Shawinigan a stationary one, and Sprout Waldron a refiner for the lab headed by Dr. J. H. FISHER.

BETTER PAPER THROUGH HERCULES CHEMICALS

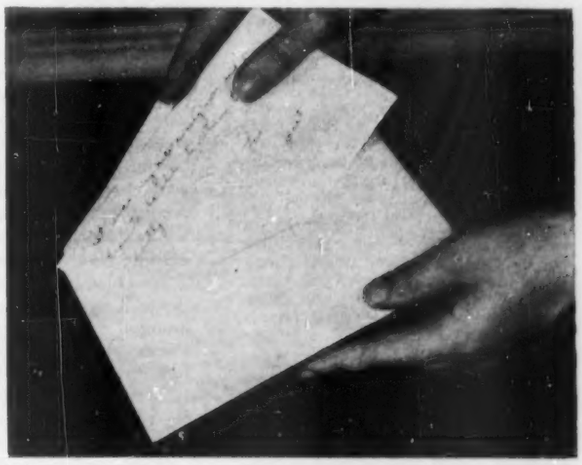
More than a dozen types of Hercules Paracol® wax emulsions, each developed in Hercules laboratories to solve some specific type of sizing problem, are improving performance while effecting economies in size furnish for paper and board mills from coast-to-coast.

The wide range of Hercules Paracol wax emulsions and the diversity of their applications indicate the many opportunities Hercules papermaking chemicals offer to improve your products and reduce your costs. Contact your local Hercules technical representative or write directly to Hercules for descriptive literature.

LIQUID REPELLENCY—In surface sizings, the addition of small quantities of Paracol at the calender stack or size press improves liquid repellency and printability of paperboard.



TECHNICAL DATA—This descriptive booklet containing technical data on all types of Paracol can be obtained by writing Hercules for your copy.



IMPROVED QUALITY—One or more of the Paracol wax emulsions are used for fold properties of envelope papers, improving finish and creasing properties of many types of paper and board.

Paper Makers Chemical Department

HERCULES POWDER COMPANY

965 King Street, Wilmington 99, Delaware

650 OF THE NEW TIDLAND

pneumatic wind & unwind

SHAFTS

are making money for 125 mills throughout the U.S. and Canada . . .

Covered by U. S. and Canadian patents

Custom-built in any length or diameter. Finest workmanship.

TIDLAND SHAFTS come in two types: (A) the leaf-type collapsible shaft for rewind, and (B) the lug-type for mill rolls. They are custom-built to meet your particular needs, using highest quality materials.

Because of their rigid construction and the tight hold they exert along the entire roll, Tidland Shafts eliminate deflections and resulting damage to cores and paper, and make higher maintained operating speeds possible.

It is not uncommon for a Tidland Shaft to pay for itself in a few weeks from this saving in time and paper. Simply designed, these shafts cost next to nothing to maintain.

Write for list of mills in your locality using Tidland Shafts.

TIDLAND SHAFTS

Manufactured by Tidland Machine Co.

CAMAS, WASHINGTON

Represented in New England by ORTON CORP., Fitchburg, Mass.

ALL VALVES WERE WIDE OPEN FOR THIS PANEL

ART DAMMANN (extreme left), Instrument Engineer, discussed the highly instrumented new Alaska mill. Others (l to r) were on control valve panel in Bellingham meeting: DEWEY HOUSTON (gate valves); JIM WENGER, Crown Zellerbach, Tech. Dir., Port Angeles (pinch valves); NORVAL MAGNUSSON, Moderator; JACK DUNKAK (DeZurik plug valves) and VANCE REYNOLDS (butterfly valves). Messrs. Houston, Dunkak and Reynolds are Chem. Engineers at Puget Pulp, where Mr. Magnuson is Tech. Director.

GAVE PAPER

At Bellingham instrumentation meeting, DAN HAYDEN (left), formerly of W. R. Grace & Co.'s Paramonga, Peru, bagasse pulp mill, gave a paper on pulping equations. He and DON KOTZERKE (right) are attending U. of Washington under Tappi Acid Pulping Committee research grants.

New Facts on Ketchikan's Instrumentation

● Instrumentation, vital adjunct to all operations in this industry, can be obtained in a modern mill of today for less than 1½% of the total cost of the mill.

Such a comparison was drawn by Art Dammann, instrument engineer, Ketchikan Pulp Co., for 100 members of Pacific Section Tappi. They met Nov. 9, at Bellingham, Wash., in their annual instrumentation meeting.

Mr. Dammann's paper provoked great interest among members anxious to learn more details on operation of the Ketchikan plant. (Complete report on all phases of the Ketchikan Pulp Co., including instrumentation, in Oct. 1954 issue of PULP & PAPER).

Mr. Damman's figure of 1½% of total cost, when applied to the round figure of $50,000,000 total would give a figure of about $750,000 for instrumentation. He stated that instruments were 9% of the bleach plant cost and 4% in the powerhouse, the figures including control valves.

Mr. Dammann said he did not believe Ketchikan has an inordinate amount of instruments. All instruments governing each division of the mill are concentrated in central ventilated control rooms, where they can be read quickly and easily by the attendants.

There are no process lines to control panels. They used all copper tubing in the mill, due to the corrosion problem. Tubes in bleachplant had 0.001 in. coating of polyethylene. Sweated fittings were used on the copper and taped with polyethylene electrical tape.

Mr. Dammann said, "the big problem was tracing the lines out to begin with. We used phones at each end and blew air through the different tubes."

Some other features pointed up by Mr. Dammann:

Filter plant is unattended 16 hrs. per day. There are signals when the clear wells become low or when chemical feeders plug at night. A pH recorder has also been installed.

Success is reported in using oxygen recorders instead of CO_2 recorders for controlling fuel air ratio A cast steel valve is successfully metering chlorine from storage.

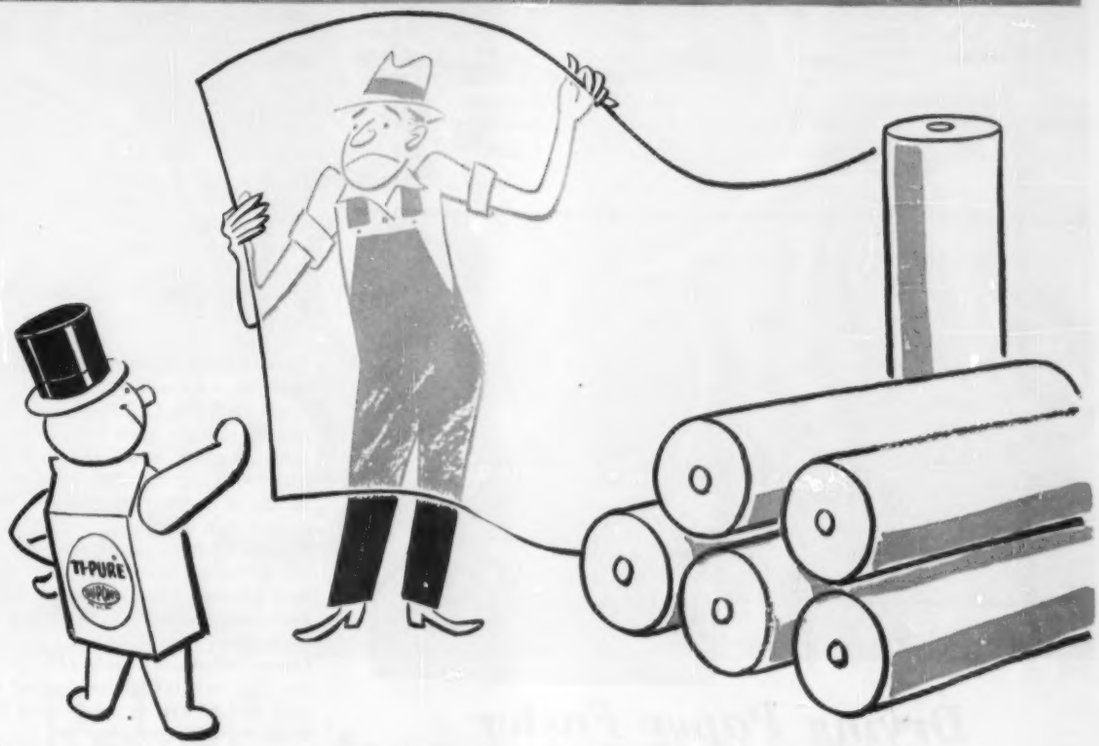
"On a job like this, you cannot 'over-prepare' on instruments. We could have prudently spent twice the time in preparation." One thing that helps—making available flow sheets to instrument people from the start.

Dan Hayden, working for his doctorate at the U. of Washington, presented a paper on "*Sulfur Dioxide—Ammonia—Water System.*" He discussed a set of correlating equations to be used, e.g., in the design of absorption towers for manufacture of ammonia cooking liquor. Following his graduation in '41, he was in charge of the caustic soda-chlorine plant at W. R. Grace & Co.'s bagasse and paper mill, Paramonga, Peru.

A panel went into pros and cons of various valves for handling slush pulp stock.

Curtis Courtelyon, manager of General Petroleum's new Ferndale, Wash., refinery, in a dinner talk, likened oil refining to pulping, and disclosed that a new bacteriologic enemy for petroleum effluent has been discovered.

"Your paper's not opaque, I see — Let Ti-Pure® fix that instantly!"



There once was a mill owner, Phineas Blake,
Whose job was to make his thin paper opaque.
Try what fillers he might, despair was his lot
Till TI-PURE of DU PONT arrived on the spot.

"Phineas," said TI-PURE, "it's really worth noting,
How you can curb 'show-through' with me in your coating.
Like all Du Pont pigments, I've been put to the test;
I'll give you results that are always the best!"

So Phineas put TI-PURE in his coating machine,
Now his paper's opaque—the brightest you've seen.

MORAL:

Why you should use TI-PURE is quite plain to see:
It gives whiteness... and brightness... and opacity!

• • •

Du Pont now offers a direct-to-you field service on TI-PURE titanium dioxide pigments. Technical experts, backed by a modern paper laboratory, will be glad to help you with your pigmenting problems. Call our nearest office for details.

PROMPT, NATION-WIDE SERVICE THROUGH THESE DU PONT DISTRICT OFFICES* AND WAREHOUSES:

Atlanta, Ga.	Indianapolis, Ind.	*New York, N. Y.
*Chicago, Ill.	Kansas City, Mo.	*Pasadena, Calif.
*Cleveland, Ohio	Lockland, Ohio	*Philadelphia, Pa.
Dallas, Texas	Louisville, Ky.	*Portland, Ore.
*Detroit, Mich.	*Malden, Mass.	St. Louis, Mo.
*Houston, Texas	Minneapolis, Minn.	*San Francisco, Calif.
	New Orleans, La.	Seattle, Wash.

DU PONT

Ti-Pure®
TITANIUM DIOXIDE

TI-PURE gives your paper:

WHITENESS. Lasting whiteness in food wraps and containers, waxed board, glassine, and parchment.

BRIGHTNESS. Permits sharp reproduction of printed matter in porous papers, such as magazine and book stock.

OPACITY. No "show-through" in lightweight papers, envelope and stationery stock.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. DU PONT DE NEMOURS & CO. (INC.), PIGMENTS DEPARTMENT, WILMINGTON 98, DELAWARE

EXPANSION IS COMING—1955-7

Continued from page 51

new 216 in. Beloit cylinder machine to start up in 1956.

North Carolina Pulp Co., Plymouth, N. C. —its fourth Fourdrinier board machine will be installed in coming year.

West Virginia Pulp & Paper Co., Charleston, S. C.—new Fourdrinier machine planned and other additions.

Gulf States Paper Corp., Demopolis, Ala. —new site purchased here for pulp and paper mill expansion.

Mead Corp., Sylva, N. C.—new 152 in. Downingtown Fourdrinier being installed in No. 1 machine, to make corrugating with semi-chemical or chestnut furnish.

Olin-Mathieson Chemical Corp., Shreveport, La.—its extensive Frost Lumber timber holdings may only attain full economic use when pulp is made. Its own consumption of cellulose is increasing.

At least three other big Southern pulp and paper firms are reported planning and engineering for expansion on a big scale. One project is described reliably as a new $18,000,000 program.

Brewton, Ala. (where 3 inter-connected lumber-timber holdings total 700,000 acres), Butler, Ala. (where two big paper companies have made studies), and either Enterprise or Quitman, Miss. (where a paper mill was reported buying timber lands), are sites in the South recurrently mentioned for new mills.

Southern Chemical Cotton Co., Chattanooga—expanding cotton linters pulp by 200 tons a day, ready in Mar. 1955. J. E. Sirrine Co., engineers.

THE FAR WEST—North Western Pulp & Power Co., Edson, Alberta—St. Regis Paper and North Canadian Oils, joint owners of projected $30,000,000 pulp mill. Howard Simons, Vancouver, B.C., is consulting engineers; Justin McCarthy (St. Regis), chief engineer in charge.

Brit. Columbia Forest Products Ltd., Cowichan Bay, B.C.—plans $25,000,000 market kraft pulp mill here, has started bid for Crown timber lease.

MacMillan & Bloedel Ltd., Port Alberni, B.C.—plans being made to expand market pulp mill.

Powell River, Vancouver—contemplates a new mill at Kitimat, B.C.

Longview Fibre Co., Springfield, Ore.—new 70 acre site taken for mill to make pulp and corrugating by this firm which has 750-ton mill in Longview, where production of its No. 6 machine is being increased from 300 to 450 tons a day.

Western Kraft Corp., Albany, Ore.—new 100 ton a day kraft board mill, with a Bagley-Sewall (Black-Clawson) 164 in. Fourdrinier machine and Babcock & Wilcox recovery unit.

Crown Zellerbach Canada Ltd., Duncan Bay, B.C.—$15,000,000 unbleached kraft pulp mill to start up by summer 1956. Howard Simons, engineers.

Crown Zellerbach, Antioch, Calif.—new Beloit 252 in. paper machine, 400 tons a day, using Duncan Bay pulp, startup mid-1956.

Crown Zellerbach, St. Helens, Ore.—new Beloit 35,000 tons per year tissue machine and pulp expansion under way.

Scott Paper Co., Everett, Wash.—No. 3 and No. 4 Beloit-built tissue machines to be installed in 1955. Half of world's biggest sulfite paper mill changed over to ammonia base, increasing output to over 700 tons a day. Consultant, Chas. T. Main, Inc.

Weyerhaeuser Timber Co., Longview, Wash.—adding another 165 in. Beloit kraft paper machine in 1955.

Willamette Valley Lumber Co., at Corvallis, Dallas or Foster, Ore.—one of Oregon's biggest lumber firms plans $10,000,000 pulp and paper mill.

Oregon Mesabi Corp., Lincoln Co., Ore.—with over billion ft. of timber, sold to Blyth & Co., investment bankers, and sale of properties considered to Georgia-Pacific Plywood Co., which is interested in pulp production.

Alaska pulp projects: Georgia-Pacific Plywood bid for timber and 80-ton mill in $57,000,000 forest products project at

Drying Paper Faster

Drying efficiency depends upon the ability of the dryer felt to take up water and to get rid of water—*the drying rate of the felt itself.*

Barrell Tour Boss L. D. Felts have a fast absorbing surface ply and fast vapor-eliminating surface—a double surface fabric with high capillary power. Note the close texture face surface above in contrast to the open weave back which offers approximately 30% greater evaporation area. The felt absorbs water faster—gets rid of water faster—improves paper-drying rate.

BARRELL TWO-PLY COTTON DRYER FELTS

Siamese • Tour Boss
L. D. Constructions
By Lawrence Duck Co.
Lawrence, Massachusetts

BAR-L DRYER FELTS

WILLIAM L. BARRELL CO.
52 Chauncy St., Boston, Massachusetts

Relief... for a production pain

What's your particular "ache"? Looking for ways to cut costs... improve production... speed plant operations... reduce maintenance costs?

Here's a prescription that can provide an effective solution for you... the specialized service offered by your Chain Belt Field Sales Engineer and the outstanding performance of Chain Belt Equipment:

for example: If you want to increase capacity of your wood chip belt conveyors, Rex Wood Chip Idlers are your answer. Because concentrating rolls are sloped at a 45° angle instead of 20°, you can load chips close to the belt edge without spillage... increase conveyor capacity considerably.

for example: Tried belt transportation for logs? Where conditions are right, belt conveyors can help you increase production... reduce pulpwood handling costs. And, Rex Extra Heavy-duty Flat Belt Idlers are designed especially for this service... to operate efficiently with logs piled high on the conveyor.

for example: If maintenance is your problem, here's a suggestion. Use Rex Split Hardened Rim Traction Wheels and Sprockets. Just install the body, then each rim segment. Replacement of rim section can be done without removing the chain. Down time can be reduced with these long-wearing traction wheels and sprockets.

Whatever your needs... drive chain, conveyor and elevator chain, complete elevators, belt conveyors, feeders, roller bearings, buckets or sprockets, you'll relieve those production pains by looking to Chain Belt. See your local Field Sales Engineer or write direct to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all Principal Cities

Juneau; Pacific Northern Timber Co. awarded 3 billion ft. at Wrangell for integrated operations including 100-ton pulp mill; Japanese interests send new commission to plan a 300-ton Sitka mill.

Two other big Far West pulp and paper projects are definitely being planned, with positive assurance that one will materialize shortly. Powell River and other companies are stepping up production on existing machines. Fibreboard Products plans new carton plant in Denver; Longview Fibre is building a converting plant in Seattle; American Forest products Corp. announces $2,500,000 carton plant for Newark, Calif.

MIDWEST AND NORTHEAST—**Marathon Corp.**, Green Bay, Wis.—ordered new Beloit Yankee type 173 in. Fourdrinier for tissue, to start up in March 1955. New Neenah packaging plant.

Lee Paper Co., Vicksburg, Mich.—announces new Beloit Fourdrinier machine to start up in 1956, following coating expansion.

C. H. Dexter & Sons, Windsor Locks, Conn.—New Rice Barton machine is ordered.

Great Northern Paper Co., Millinocket, Me.—second big Beloit 276 in. newsprint machine goes into line in 1956, following recent startup of one new one, and new chemi-groundwood plant.

New York & Penn Co., Lock Haven, Pa.—new 116 in. Downingtown Fourdrinier starts up in early 1955.

Thos. Galante & Sons, Mechanicville, N. Y.—announce new plant expansion to be completed in 1955.

Celotex Corp., Port Clinton, O.—new gypsum board mill being built.

Hammermill Paper Co., Erie, Pa.—new bleaching and pulping plant under way for Neutracel pulping of hardwoods.

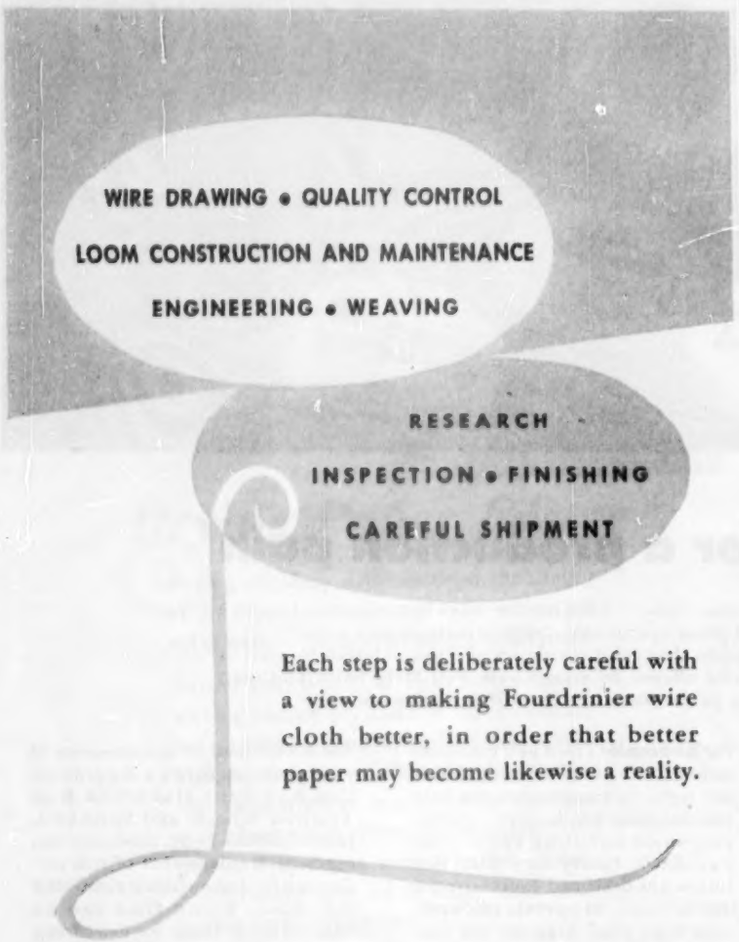
Halifax Power & Pulp Co., Sheet Harbor, Nova Scotia—owned by Hearst, plans a $10,000,000 pulp and newsprint mill.

Dryden Paper Co., Dryden, Ont.—plans doubling kraft and groundwood pulp to 142,000 tons by 1958 for $11,600,000. Owned by Anglo-Canadian.

Brown Co., Berlin, N.H.—Plans $10,000,000 bleach plant and furfural expansion from proceeds of sale of Canadian properties.

Several other mills are considering new machines or expansion of one kind or another in the Midwest and Northeast, and one is known to have ordered a new Rice Barton Fourdrinier machine.

Use of hardwoods promises expansion in some of these areas. Nearly every mill with hardwoods near its door is considering semi-chemical pulping expansion for almost any grade of paper or board.



Each step is deliberately careful with a view to making Fourdrinier wire cloth better, in order that better paper may become likewise a reality.

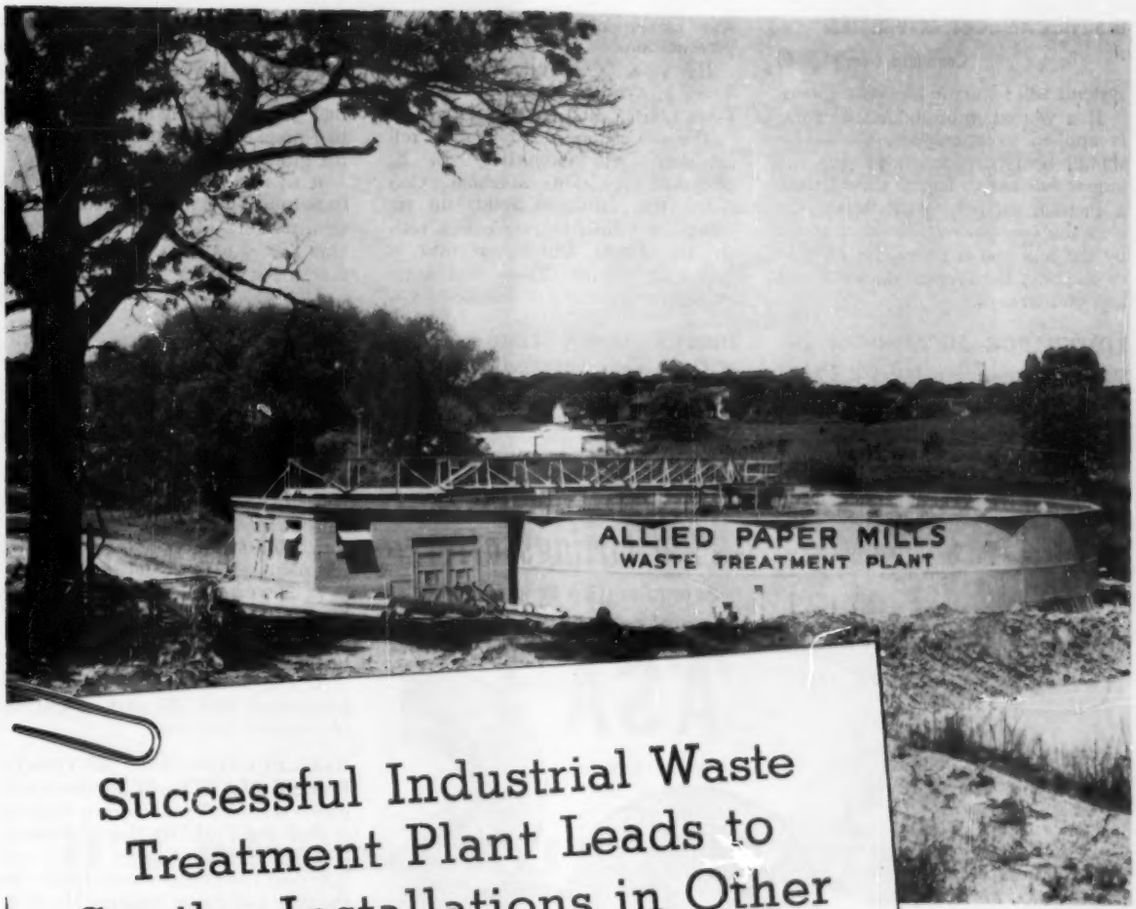
THE LINDSAY WIRE WEAVING COMPANY
Cleveland 10, Ohio

LINDSAY WIRES Since 1904
FOR PAPER MANUFACTURING

PROMOTION FOR "CAL"; VICKERY IS HONORED

OLIN W. CALLIGHAN (left), who has been promoted to Paper Sales Mgr. for new Minerals & Chemicals Corp. of America, and in time will move to Metuchen, N.J. He not only heads up Edgar Division paper sales now, but also those of Attapulgus Division. Graduate of Maine, former Asst. Supt. and Chief Chemist at Allied Mills, he has been lifelong resident of Kalamazoo, in 25 years serving Edgar Bros., now merged with Attapulgus.

CHARLES H. VICKERY (right), Vice Pres. and Sales Mgr., E. D. Jones & Sons Co., Pittsfield, Mass., has accepted position of Nominating Committee Chairman for Industrial Affiliates of Supts. Assn. He will report new officers' slate to Affiliates Chairman Callighan at June 14-16 convention in Cincinnati.



Successful Industrial Waste Treatment Plant Leads to Similar Installations in Other Paper Mills in Michigan

This 90′ dia. Type S Dorr Thickener is installed at the Monarch Book Division of Allied Paper Mills in Kalamazoo, Michigan. Feed to the unit is 4300 gpm of de-inking wastes containing approximately 0.3% solids. A clarified effluent, well within the requirements of the state pollution abatement authorities, is discharged to a nearby stream. The success of this Dorr Thickener at Allied has led to similar installations in other paper mills in Michigan.

There's no "cure all" for industrial waste treatment. But there's a good chance that Dorr's diversified equipment and diversified experience can add up to the *right* kind of solution.

If you have a waste treatment problem we would welcome the opportunity to work with your consulting engineers. If you are a consulting engineer actively engaged in waste treatment, our experience is at your disposal.

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ELECTRICAL CONTROVERSIES

Continued from page 60

systems will be made into data sheets.

If a wound rotor induction motor is applied to a chipper, the motor should be large enough to chip the largest full length log. It should have a thermal capacity great enough to chip the cordage requirements as set by the mill and it should be capable of chipping the average diameter mill logs end-on-end.

POWER FOR SUPERS—The discussion paper, *"Power Requirements for Super-calenders,"* by J. L. Van Nort (of Reliance Electric & Eng. Co.) was rather straight-forward in its presentation:

HP = K × Width × Maximum Speed × Average Nip Pressure × No. Fiber rolls × Roll Hardness.

The discussion of the factor "roll hardness" was interesting. E. E. Thomas (Appleton Machine Co.) stated that hardness builds up six points on Filmat or raw cotton rolls on the Shure Durometer over a period of a year. There was some mention of hysteresis of calender rolls.

DRIVES' DOWN TIME—*"Results of Down Time Investigation of Electric Drives"* was very well summarized by Dick Sorenson (Union Bag & Paper Corp.) Quite a number of mills kept complete records on their drives and even though the drives were different, there were some startling conclusions that could be drawn. Mr. Sorenson had prepared a number of very clear bar graphs to illustrate each point.

It was of particular interest to me to note that the average electrical lost time for some 40% of the drives was only 2 to 4 min. per day (over the 7 month test period).

The electrical lost time can be broken down as follows:

Motors and generators	23%
Draw variations	17%
Regulator re-adjustment	9%
Wiring and grounds	8%
Relays and contactors	8%
Tubes	4%
Pushbuttons	2%

There are several fine results of this work:

1. Mills will keep more and better records of electrical lost time.
2. There will be a tendency to put lost time where it really belongs if records are kept and lost time questioned by management.
3. The industry has been made acquainted with the real magnitude of electrical lost time.

BARK-BURNING AND OUTDOOR POWER PLANTS—At the steam and power sessions *"Simultaneous Burning of Bark and Coal,"* by Harold Hansen, (Champion Paper, Canton, N. C.), and *"Outdoor Power Stations as Applied to the Pulp and Paper Industry,"* by R. J. Chapman Stone & Webster Engineering Corp., were of general interest to me. Mr. Hansen made several outstanding points. Champion achieved a 77% efficiency for burning bark even though there were wide variations in the quantity of bark from the woodroom. There was no beneficiation, no bark storage, and the firing of bark and coal in any combination was done using automatic controls.

The paper by Mr. Chapman on outdoor power stations concerned a controversial subject. There are a number of outdoor power plants in the south, one in the paper industry is at Gaylord Container Corp. in Bogalusa, La., and there is a pulp mill of semi-outdoor construction in Florida. Engineers should keep an open mind and study the advantages and disadvantages of outdoor construction. Possibly an outdoor turbogenerator and switchgear with an enclosure for operators and operating controls is the best compromise with cost, comfort, maintenance and accessibility.

On the final day of the conference, delegates had the choice of going on a tour either of a General Electric or Westinghouse plant, along with a Scott mill visit.

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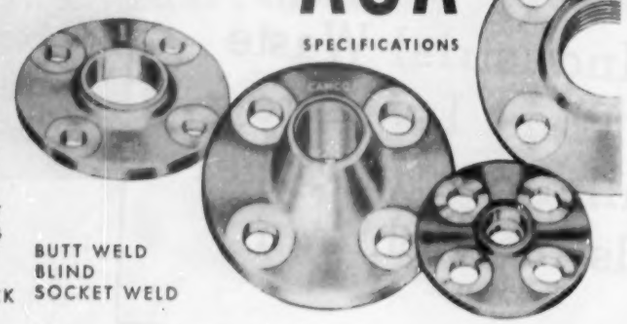

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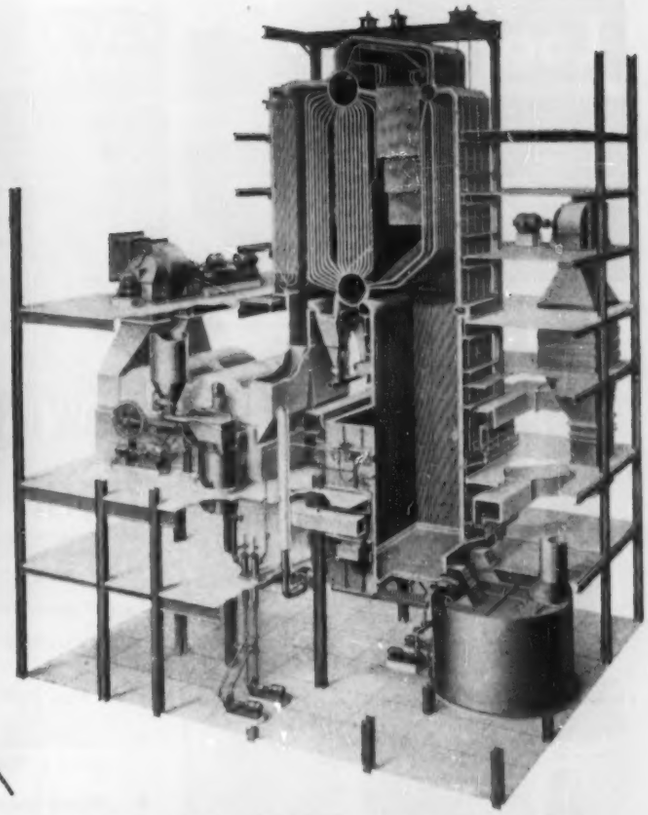

it's ahead AUTOMATICALLY

Yes—the C-E Recovery Unit *is* ahead automatically because now it is available with automatic controls that take the guesswork out of recovery unit operation. While combustion controls, flow regulators and the like have long been standard equipment on many power boiler installations, their adaptation to the special problems involved in the burning of black liquor have been an elusive goal. Their successful application to the C-E Recovery Unit is now a service-proved fact.

By accurately and automatically adjusting the flow of air to the flow of fuel in just the right proportions, the C-E Recovery Unit has a sensitive response to change in black liquor flow—a response very difficult to duplicate through manual means.

The result?—More efficient black liquor combustion, less combustible matter in flue gas and more steam per ton of black liquor solids burned. This means, of course, an attendant reduction in steam costs.

Another equally important result is that the operator is no longer required to perform the tedious and time-consuming task of trying—sometimes not too successfully—to balance the air flow against an ever-changing black liquor supply. Relieved of this assignment, his time is available for other duties.

The application of automatic control to the C-E Recovery unit is still one more indication of the continuing efforts on the part of C-E to make a good product better.

Other C-E Equipment—In addition to the C-E Recovery Unit, Combustion Engineering is in a position to furnish any type of boiler, fuel burning and heat recovery equipment for supplying the steam needs of the paper mill; flash drying and calcining equipment for the recovery of lime; and pressure vessels for digestion and process. Through this wide range of C-E products, the advantages of single-contract responsibility are available to your plant.

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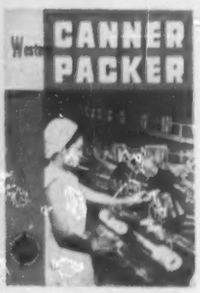

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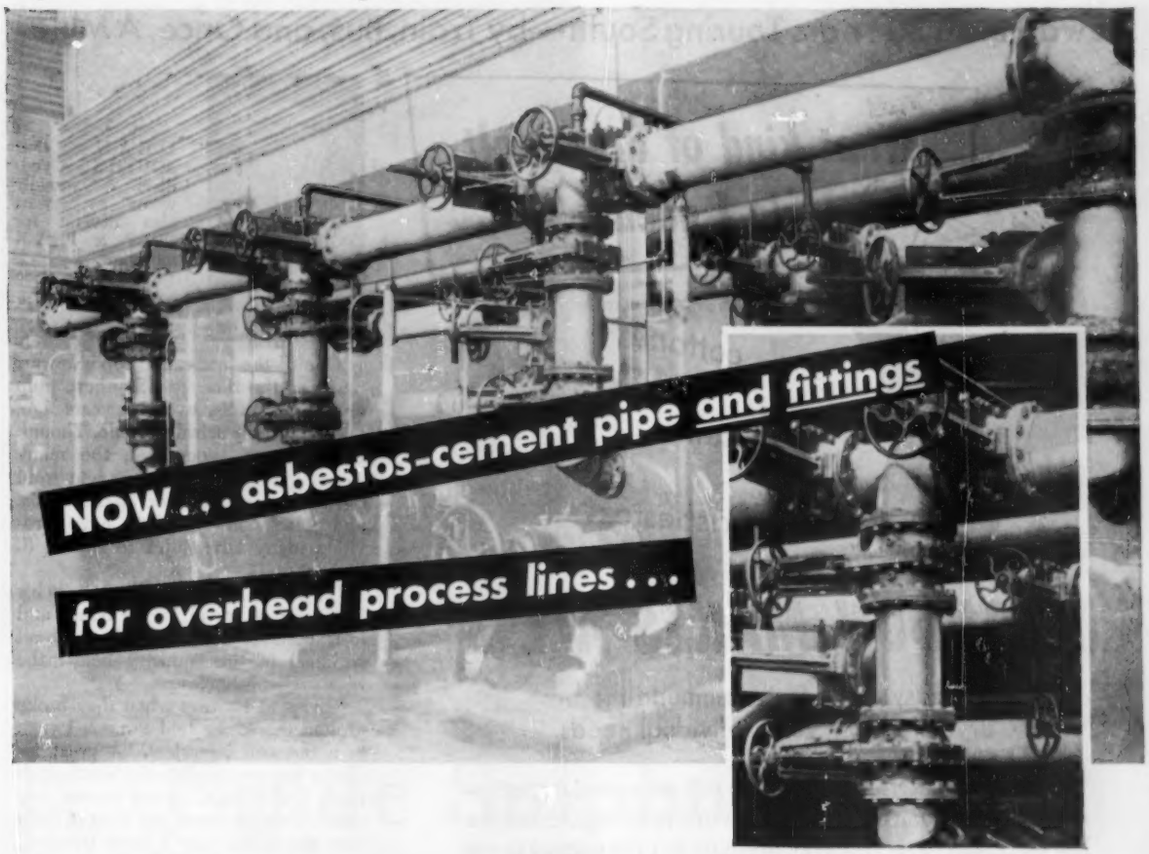

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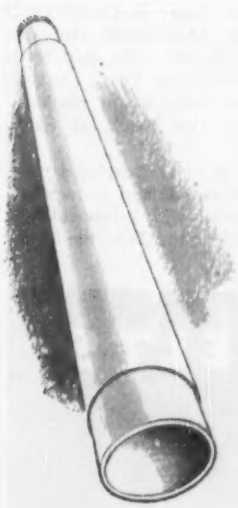

YOU can now obtain Transite* asbestos-cement Pressure Pipe with Transite-lined Streed Fittings for your overhead process systems. This permits the installation of high strength non-metallic pipe for handling raw and treated water, washed and unwashed pulps, stocks of all kinds, multi-stage bleaching systems (except direct chlorination) and certain mill wastes. There is no better way to provide clean pulp and stock than by handling it through Transite Pressure Pipe.

Low installation costs—Transite is light in weight, easy to handle, and can be drilled, cut, threaded and machined with standard tools. *And*, because its carrying capacity stays high, you can specify the smallest diameter pipe necessary . . . thus making the minimum capital investment.

Low pumping costs—Transite Pressure Pipe offers exceptionally low frictional resistance to the flow of liquids (flow coefficient C=140 for water). Since it is resistant to sliming and bacterial growths, this high carrying capacity is continuously maintained so that pumps can be operated at maximum efficiency and lowest cost.

Low maintenance costs—Transite cannot rust and is highly resistant to the corrosive action of mild acids and alkalies. Consequently, it requires a minimum of maintenance throughout its long life.

For underground service too, such as water supply or fire lines, Transite Pressure Pipe offers the same outstanding advantages. To obtain further information on Transite Pipe Systems for paper mills, write Johns-Manville, Box 60, New York 16, N. Y.

*Reg. U. S. Pat. Off.

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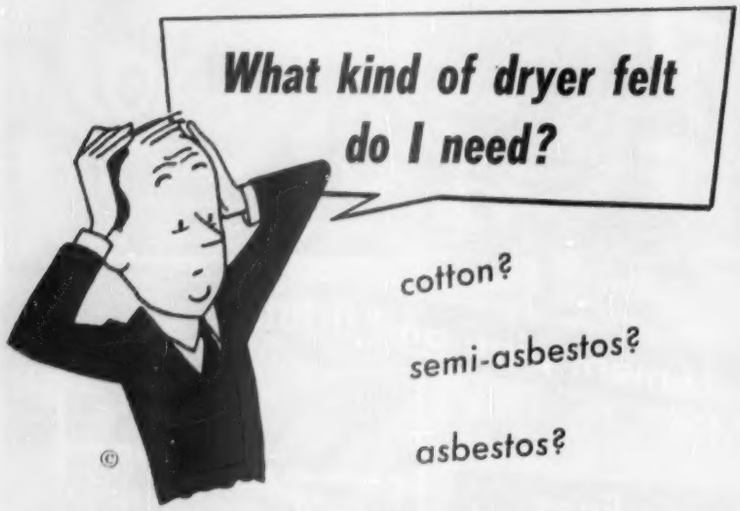
Stewart Ends 30 Years Touring South—by Train, Bus, and Once, A Mule



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BRANDON DRYER FELTS

DEAN OF SOUTH'S "Peddlers" proudly wears a Stewart clan necktie for PULP & PAPER interview.

One of the first calls "Pop" Stewart made on the then new Southern pulp and paper mills, over 30 years ago, was reportedly astride a mule. Though this may be apocryphal, the many thousands of miles via bus and train covering the South for Shartle Bros. and Black-Clawson Co., have provided many adventures to Robert S. Stewart.

On Jan. 1, 1955, he will retire, in his 31st year of travel in the South and it is believed he is the dean of all peddlers in this industry below the Mason-Dixon line.

"I was at Bastrop when they broke ground there," he told PULP & PAPER in a farewell interview. "A great industry has grown up in the South since then, and it hasn't even shown any sign of slowing down yet. A lot of folks joke about the way I have traveled, but I've seen a lot of the South and I wasn't tired from fighting a wheel on the highway, dodging other cars, cattle and porkers, when I reached my destinations.

"Pop" was born in Jefferson County, Ohio, and his home in recent years has been the Manchester Hotel in Middletown, O. His wife died three years ago. After New Year's Day, he expects to be living in an efficiency apartment on the beach at Santa Monica, Calif.

"Pop" was proudly wearing a royal Stewart plaid necktie and socks when he was presented with a farewell gift of a gold watch at the Asheville Supts. meeting.

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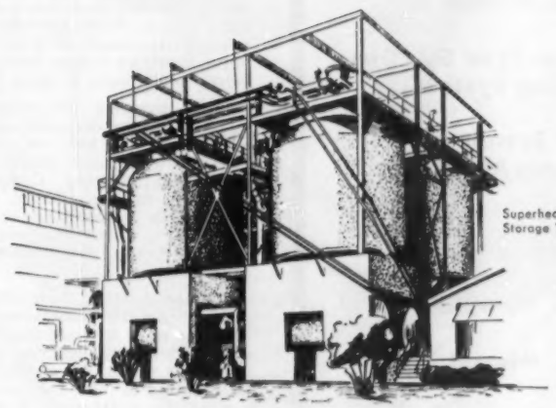

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NEW WASTE WOOD CHIPPER

A waste wood chipper especially designed for sawmills who wish to make chips economically is offered in three disc sizes: 36", 42" and 48". Under normal operation these chippers can produce up to 15, 18 and 22 cords per hour respectively with low horsepower.

Tests made on southern pine slabs indicate that the chips produced by these machines may not need screening. The economy factor from this point alone is considerable. Most sawmills can pick enough clean wood off their waste conveyor to make a chipper installation well worth while, even without barking.

These chippers are ruggedly constructed and are designed especially for easy installation and low maintenance. These chippers are produced by the Hansel Engineering Company, 1500 Westlake Avenue North, Seattle 9, Washington. Inquiries in the South may be made to Owen-Richards Company, 1009 2nd Avenue North, Birmingham 4, Alabama.

Comparative tests made with the Hansel chipper and other chippers on Southern pine slabs indicate that the Hansel chipper makes a superior paper with greater strength. As a result of these tests several of these chippers are being ordered by a large kraft mill in the South.

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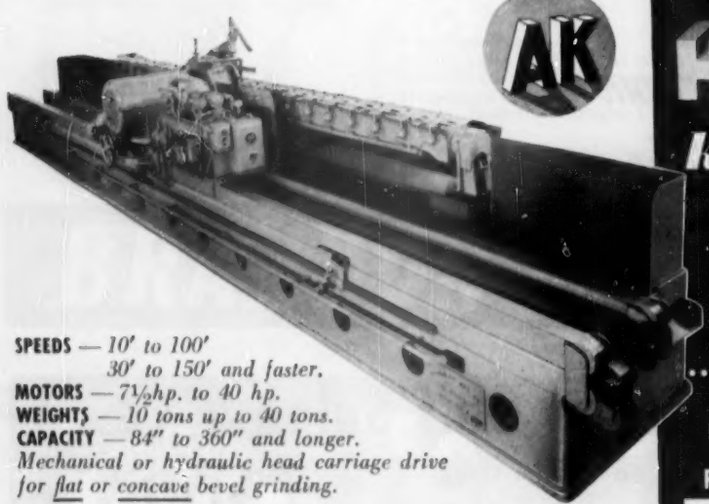

MODEL AK

SPEEDS — *10′ to 100′ 30′ to 150′ and faster.*
MOTORS — *7½hp. to 40 hp.*
WEIGHTS — *10 tons up to 40 tons.*
CAPACITY — *84″ to 360″ and longer.*
Mechanical or hydraulic head carriage drive for flat or concave bevel grinding.

Other Models.
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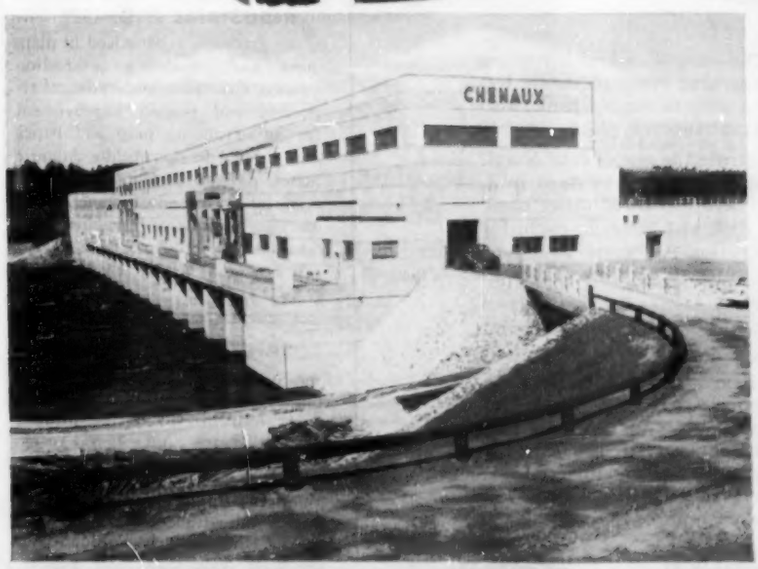

For low head hydro-electric power plants, where high speed is essential for economy in capital cost, the fixed blade propeller turbine is often the most suitable, particularly when there are multiple units in the power house.

Since 1921 Dominion Engineering has received orders for fixed blade propeller turbines with a total rated capacity over 1,300,000 H.P.

The Chenaux plant of the Hydro-Electric Power Commission of Ontario, shown here, contains eight Dominion propeller turbines, each rated at 21,000 H.P. at 94.7 RPM under a head of 40 feet. Six identical turbines are operating under 37 feet head at the Pine Falls Development of the Manitoba Hydro-Electric Board. Also under construction for this board are eight fixed blade propeller turbines for the McArthur Falls power house with a total rating of 80,000 H.P. under 23 feet head.

This background of experience combined with a systematic research programme in our own laboratory, is at your service. We invite your inquiries. Write for Dominion Hydraulic Turbine Bulletin No. 201.

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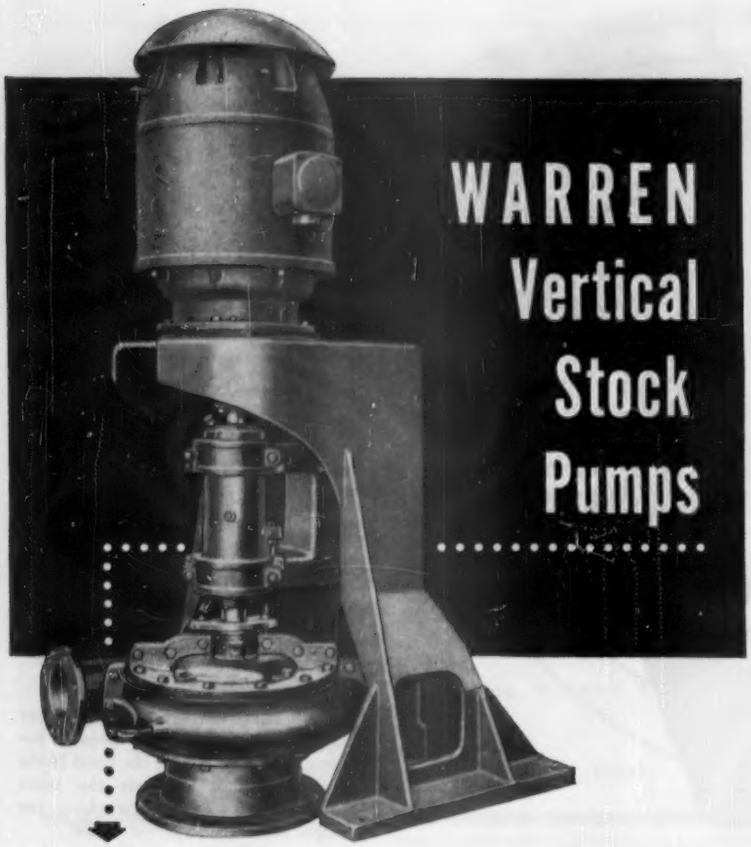

are recommended for certain difficult applications involving the handling of heavy or highly aerated stock requiring top suction and close proximity of pump to supply tank; also where limited space is an important factor.

The Warren Type SODV illustrated is one of four Vertical Stock Pumps built for a prominent mid-western mill, and handles 3% to 6% stock. There are three other basic designs available with several different sizes in each, for both submerged and dry-pit operation.

The same engineering features and dependable construction which has resulted in such a favorable "experience rating" on Warren Horizontal Stock Pumps, will be found in our Vertical types as well.

For instance, inevitable wear increases clearance between impeller and suction liner, reducing capacity, head and efficiency. An adjustment screw provides for reducing this clearance, which results in much less frequent replacement of liners. Also, a wide variety of experience-engineered impellers are available, with many standardized to fit the same type and size of pump.

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Opportunity available for Chemist or Chemical Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years with several years experience in pulp and paper chemicals and fibers. Good salary with excellent opportunity for advancement. Send resume of educational background and industrial experience. All replies confidential. Box 174-A, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

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College graduate, experienced in planning and scheduling production process, cost reduction, statistical reporting and process improvement for an expanding pulp and paper mill located in the Middle Atlantic States. Age to 30. Good salary and opportunity for advancement. Send complete resume. All replies confidential. Box 176-A, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

SANITARY ENGINEER

Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Experience in paper mill wastes, stream pollution and water purification or similar experience. Good salary and advancement. Send resume of educational background and industrial experience. All replies confidential. Box 175-A, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

GRADUATE ENGINEER, eight years experience—design, construction and maintenance on Newsprint, Kraft, Semi-Chemical and Hardboard. Desires to relocate to position with good growth possibilities. Reply Box 204, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

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SUPERINTENDENT. An excellent opportunity for a keen, energetic man to join the staff of fine paper mill currently making rag content papers for commercial, Government and technical purposes. Successful applicant will act as Assistant Superintendent for a period and when ability proven, promotion will follow. Remuneration commensurate with experience. Applications, which will be treated in strictest confidence, should be addressed to Box 186, PULP & PAPER, 370 Lexington Ave., New York, New York.

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BEATER ENGINEER. Mill in Midwest making high grade rag content papers has vacancy for Beater Engineer who is also a good colorman. An excellent opportunity for the capable man. Apply in first instance to Box 189, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

WANTED: Pulp Mill Superintendent for new board mill located in the South. Experience in the production of hardwood pulps made by the neutral sulphite semi-chemical process and a background of bleaching experience essential.

Replies will be kept strictly confidential. Submit age, education, experience, present and past positions. Address Box 197, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

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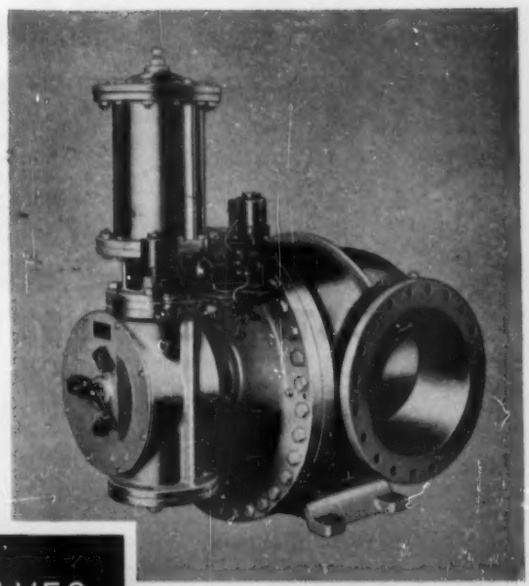
MACHINE TENDER. Experienced Machine Tender required for fine paper mill making rag content papers. Only men capable of taking full charge of machine and its operation should apply to Box 188, PULP & PAPER, 370 Lexington Ave., New York 17, New York.



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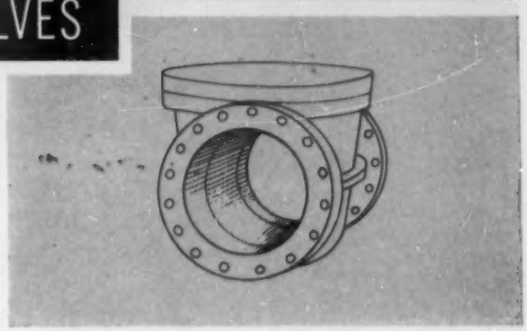
ROTOVALVES



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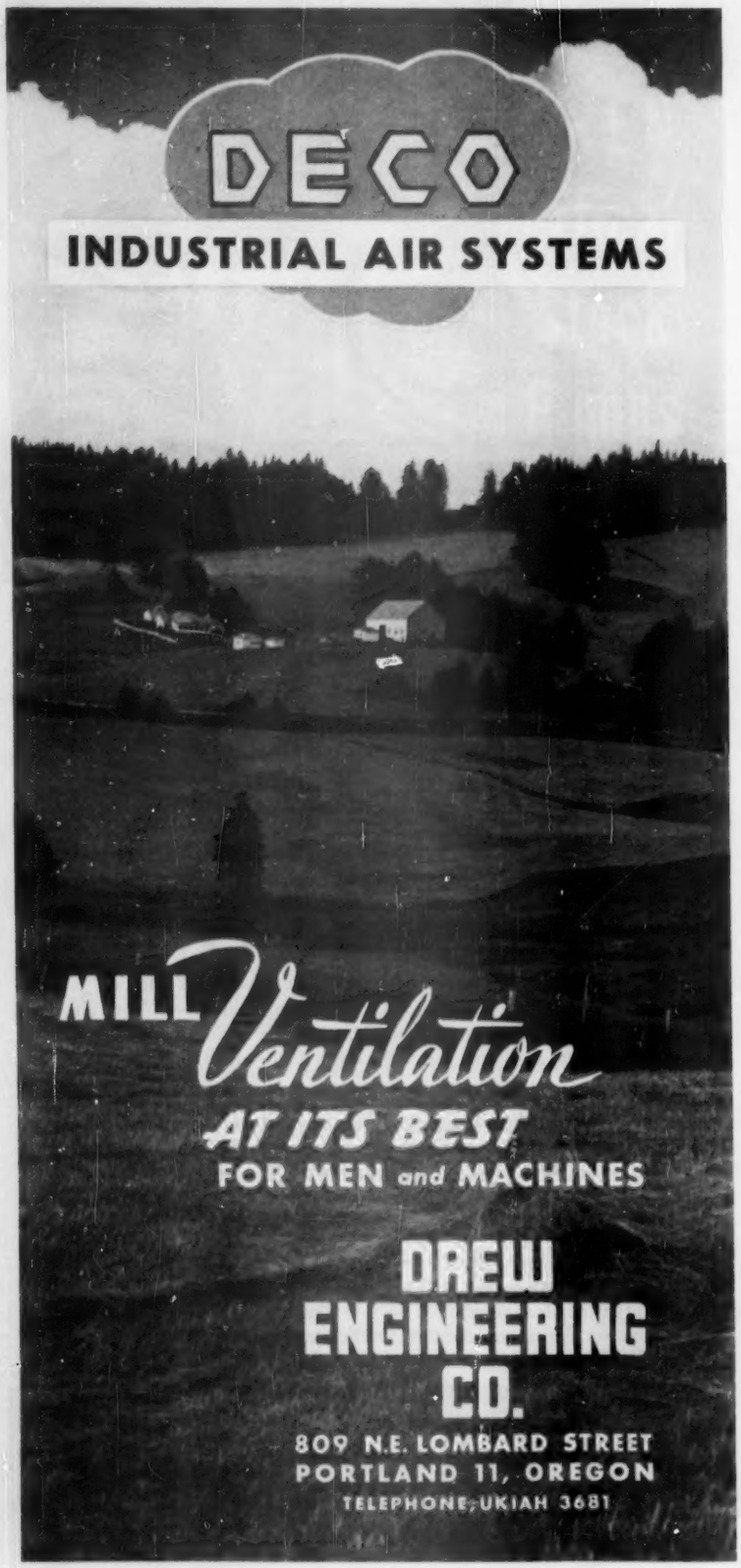

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EVEREST ARITHMETIC PUTS PULP IN PERSPECTIVE

Continued from page 70

obsolete before it is completed."

Mr. Everest predicted a 2-year decline in the *rate* of growth of pulp capacity—fewer new pulp mills.

James L. Ritchie, executive secretary of the USPPA, had a tight schedule for the tour, beginning with visits to Consolidated Water Power & Paper and Nekoosa-Edwards sulfite waste lagooning operations, later Marathon's chemical sulfite by-products plant and Rhinelander's yeast and sulfite liquor evaporation plant. Woods tours and a barbecue were interspersed.

At luncheons and dinners, speakers included Allen Abrams, Marathon v. p., and J. M. Holderby, Rhinelander by-products mgr., who talked on stream improvement and sulfite liquor by-products. George Boyd, legal advisor, talked on pending legislation, and Robert Connor outlined APPA activities.

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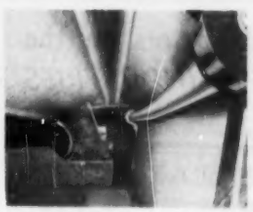

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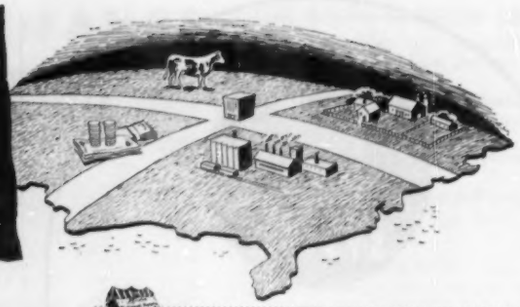

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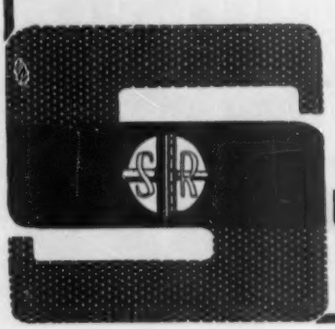

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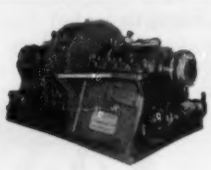

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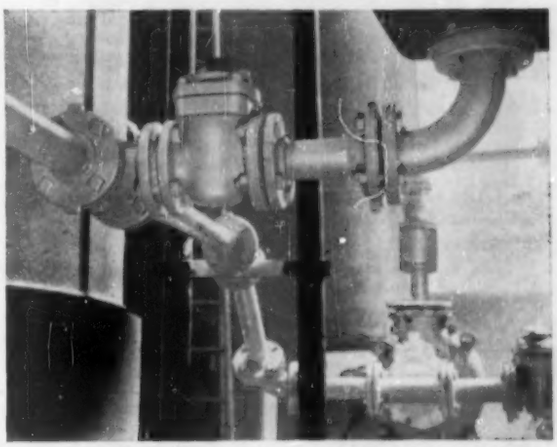

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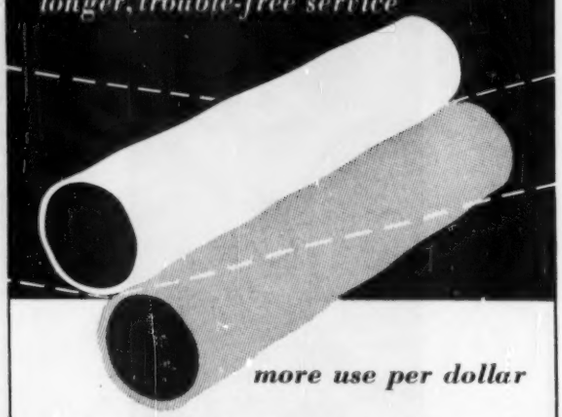

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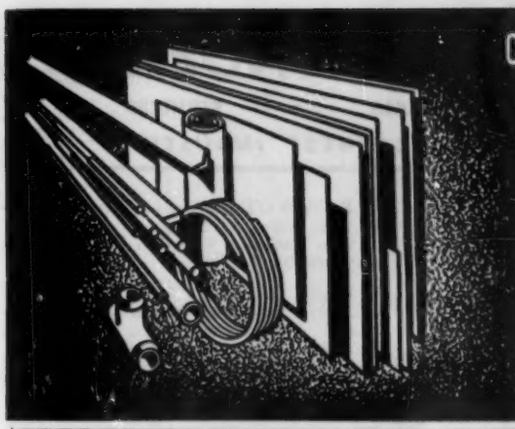

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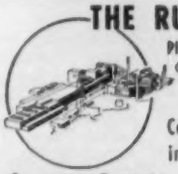

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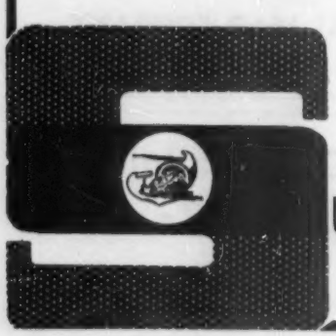
Welch Manufacturing Co. 4
Weyerhaeuser Timber Co. 139



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For details, write for Technical Bulletin P-2.

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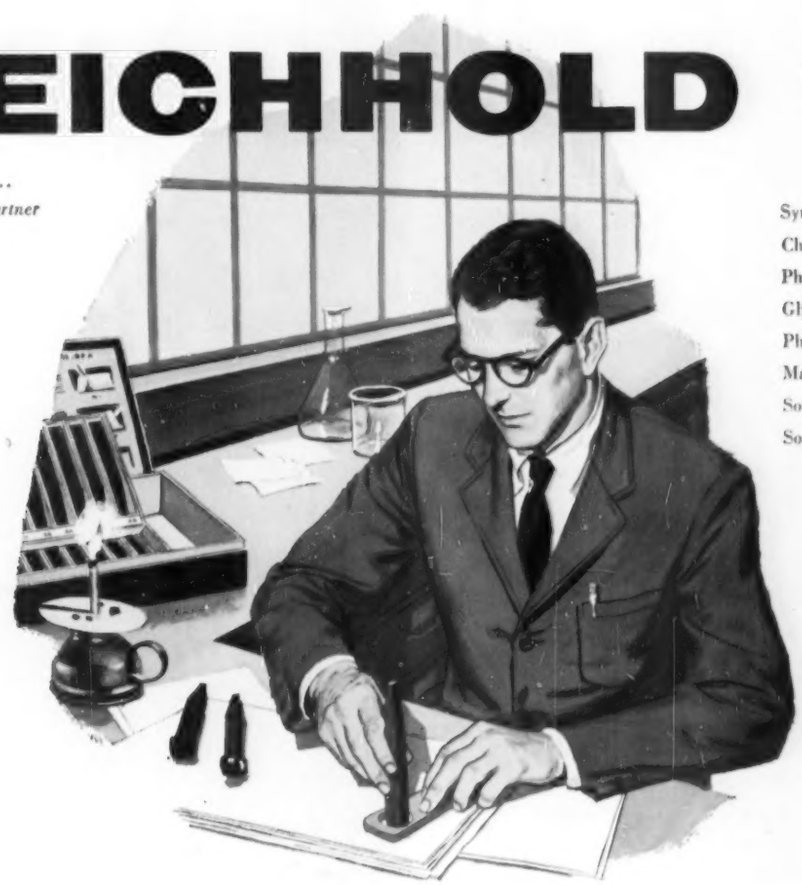

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